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AN EVALUATION OF A PLAN FOR GROUPING CHILDREN
FOR READING IN THE FOURTH, FIFTH,
AND SIXTH GRADES

by

Alice G. Olson

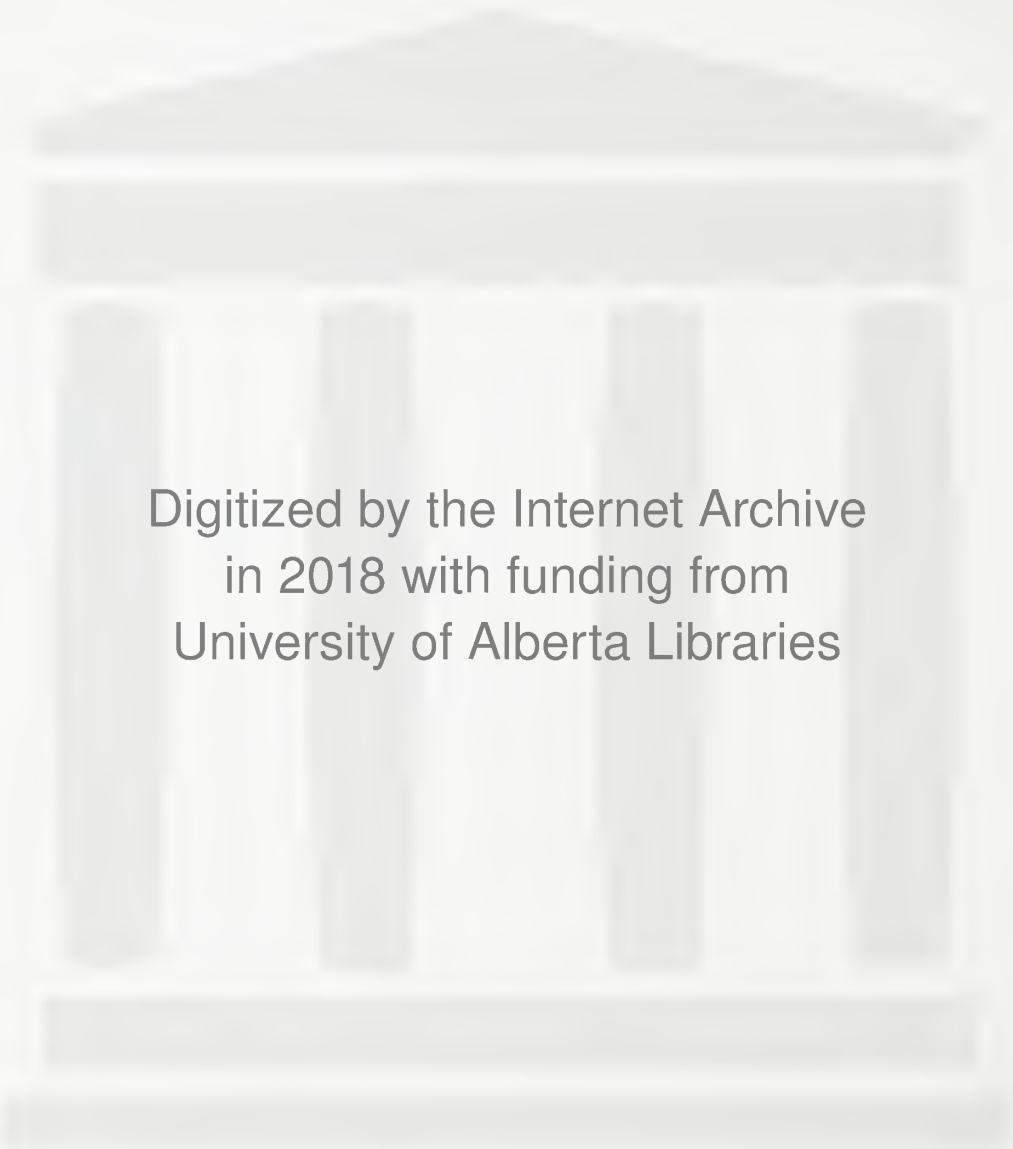
A THESIS

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ABSTRACT

This study evaluated a practice of grouping pupils for instruction in reading in an attempt to determine if grouping for reading affects reading and language achievement. For this investigation results of tests in reading and language in grades IV, V and VI of the Red Deer Public School District were analysed.

The 203 pupils grouped for instruction in reading by a Joplin-type plan became the experimental group. The 166 pupils who received instruction in reading in traditional grade groups became the control group. Pupils of the experimental and control groups were divided into low, average and high levels within each grade to determine if pupils of different levels of intelligence were affected by the grouping practices.

Comparisons were made using the results of reading scores accumulated over a three year period by the school system. Comparisons were also made between vocabulary, spelling and written language scores and between the number of books read by pupils of the two groups. The survey of the number of books read and the tests of spelling and written language were administered specifically for this study.

In general, the results of the study indicated that pupils of the Joplin-type plan did better in some areas of reading and language than those grouped by the traditional grade groups. Grade VI pupils achieved better reading scores when grouped for reading by the Joplin-type plan. Grade VI pupils were also superior in vocabulary and tended to do better in spelling and to read more books when grouped by the Joplin-type plan. Grade V pupils showed greater achievement in written language, read more books and tended to be better in spelling when grouped by Joplin-type plan. The grade IV pupils were superior in vocabulary in traditional grade groups but achieved higher in written language in Joplin-type groups.

This study produces evidence to show that pupils of the higher elementary grades generally accomplish more in reading and language when grouped by achievement in reading but that pupils of the lower elementary grades do not accomplish more in reading but show definite improvements in language.

When levels of intelligence are considered, the low level grade V pupils were the only ones who produced significantly better reading scores when grouped by Joplin-type plan. However, after three years of grouping, results indicate advantages in reading to the low intelligence level

in grade IV and VI as well.

There is no evidence to indicate that the high intelligence pupils benefit in reading by being grouped by the Joplin-type plan but there is evidence to show that language improved. This is shown in the vocabulary and spelling results of grade VI and written language of grades IV and V.

This evaluation of a Joplin-type plan of grouping children for reading in the fourth, fifth or sixth grades demonstrated that it offers certain advantages, particularly to pupils of the later elementary grades. Indications are that the plan is more effective after two or more years, particularly with pupils of the low levels of intelligence and that it is notably effective in language instruction.

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The writer wishes to express appreciation for the cooperation of the staff of the Red Deer Public Schools for their assistance in administering and handling the tests. Special acknowledgement is made to Doctor Marion Jenkinson for her direction, assistance and encouragement. Appreciation is also expressed to Doctor W. H. Worth and Mr. H. C. Melsness for their helpful suggestions. To my sister Marie, sincere appreciation is extended for her assistance in organizing and typing the manuscript.

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CHAPTER I

INTRODUCTION

The Problem

Research has indicated repeatedly the wide differences in children's ability to learn to read. These abilities to learn have been found to have no close correspondence with relation to chronological age. This suggests the inadequacy of chronological grade placement in reading without provision for individual differences. These individual differences in reading often become apparent within a few weeks after instruction begins. As the children progress through the grades, differences tend to increase to a startling degree. Finding a satisfactory method of grouping children in a reading program with enough flexibility to handle individual differences, and to reduce the spread of reading ability within a class, has been and still is a major problem. This study is an attempt to appraise a solution to the problem by tracing the effectiveness of a form of grouping for reading based on a modified version of the Joplin-type plan as practised in one Alberta school system.

Background of the Study

The purpose of this study is to investigate the significance of one system of grouping elementary pupils for instruction in reading. Reading ability of pupils of the fourth, fifth, and sixth grades who have received instruction in reading over two or more years in a Joplin-type plan of inter-class grouping for reading will be compared with pupils of similar intelligence who have received instruction in intra-class grouping within the same school system. Comparisons to be made in the study will be based on scores obtained from the testing program of the school system. These scores will reflect the qualifications of the teachers, the methods and materials used by the teachers, the number and types of tests used, and the number and types of materials used by the school system rather than record the results of a classical experiment.

There is always a percentage of pupils who by fourth grade have failed to learn to read, a number who have learned to read ineffectively and those who are content to read well but fail to develop into superior readers. A common solution to such a problem has been to establish remedial classes for the inadequate readers. Often the remedial classes are made up of pupils unable to read and instruction is geared to help those individuals but does little for the other handicapped readers in the school.

The ten teachers of one elementary school felt that, in order to make the most efficient use of the materials and teachers available to teach children to read, they would group the pupils for reading according to achievement in reading. It is the purpose of this study to attempt to determine if grouping for instruction in reading can be of assistance in teaching all children to read.

Learning to read is but one of several skills to be accomplished in the development of the language arts. This study will also examine other language skills including spelling, vocabulary and written language.

Definition of Terms

The following definitions apply to terms used in this study:

1. Intra-class grouping.- "Intra-class grouping" refers to a plan of grouping for instruction in reading according to ability to read, where pupils within a classroom have been assigned on the basis of chronological age dating from their school beginning age.
2. Inter-class grouping.- "Inter-class grouping" is defined as a plan of grouping for instruction in reading whereby pupils are grouped for reading periods on the basis of reading level regardless

of normal grade status.

3. Joplin-type plan.- The "Joplin-type plan" is a grouping system developed in Joplin, Missouri, elementary schools and originally used to group children for reading by ability level, disregarding their assigned grade level. A more comprehensive explanation of the particular modification of the Joplin-type plan is found on page 46 of Chapter III.
4. Level.- The term "level" refers to a group of pupils from one grade having similar intelligence scores. The three levels (low, average and high) were created for this study and in no way refer to the grouping of pupils for reading. A detailed description of a "level" is given on page 68 of Chapter III.
5. Language.- The term "language" refers to that part of a language arts program which can be measured by vocabulary, spelling or written language tests.
6. Written language.- "Written language" refers to the ability to translate ideas gained from reading into writing as measured by the test used in this study. A problem in reading was presented and the pupil, following general questions, was expected to write a paragraph presenting his

solution.

Hypotheses

The following hypotheses will be tested:

1. That, when pupils who are grouped for instruction in reading by a Joplin-type plan are compared with those of intra-class groups, no significant difference is found between the reading scores of the two groups in each of grades IV, V and VI
 - (a) after one, two or three years of grouping
 - (b) at the low level after one, two or three years of grouping
 - (c) at the average level after one, two or three years of grouping
 - (d) at the high level after one, two or three years of grouping.
2. That, when pupils who are grouped for instruction in reading by a Joplin-type plan are compared with those of intra-class groups no significant difference is found between the language scores of each group
 - (a) in spelling for grades IV, V or VI
 - (b) in spelling at the low, average or high level for grades IV, V or VI .

- (c) in vocabulary for grades IV, V or VI
 - (d) in vocabulary at the low, average or high level for grades IV, V or VI
 - (e) in written language for grades IV, V or VI
 - (f) in written language at the low, average and high levels for grades IV, V or VI.
3. That, when pupils are grouped for instruction in reading by a Joplin-type plan are compared with those of intra-class groups, no significant difference is found between the number of books read by pupils of each group
- (a) of grades IV, V and VI
 - (b) at the low, average and high levels for grades IV, V and VI.

The Experimental Design

The sample for this study will be drawn from the total population of pupils in grades IV, V and VI from one Alberta urban school system. The sample will be divided into two groups, a control group made up of pupils receiving instruction in reading under a system of intra-class grouping and an experimental group receiving instruction in reading under a modified version of the Joplin-type plan of grouping.

Comparison between the experimental and control groups will be made in reading to include silent reading ability

and in language to include spelling, vocabulary and written language. The two groups are to be matched as to intelligence and classified into low, average and high levels for the purpose of comparison.

With the exception of spelling and written language all the tests including the intelligence and the reading tests are taken from cumulative records of the school system.

The data for this study are processed through the t -test for the significance of the difference between means of the experimental and control groups. Where sample size is less than twenty, the Mann-Whitney U test is used.

Limitations of the Study

Depending completely on school records for the data of a study places certain limitations on the accuracy of the scores. Since tests are administered by principals rather than by one tester for all schools there might well be discrepancies in the results of the tests due to a variety of personalities involved in the testing. Also, since the tests are processed by classroom teachers and by office staff there is the possibility of errors resulting from so many individuals handling the data.

The population sample is limited by the number of pupils for which complete records are available, which does

not necessarily mean that all the pupils involved in the program are included.

Significance of the Study

This study attempts to analyse the effectiveness of a plan for grouping children for instruction in reading in grades IV, V and VI. The project under study is in operation in a school system where different administrators and a variety of teachers and pupils are influenced by the plan. To determine the significance of such a working plan may contribute worthwhile information to educators, especially those in the field of elementary education, who are interested in determining if there is merit in grouping for instruction in reading.

Grouping practices in the schools of the province of Alberta are many and varied. Seldom are these practices subjected to statistical analysis to determine their effectiveness in maintaining a high standard of education in the province. This study may contribute significant information to the accumulation of essential research data in this area.

CHAPTER II

RELATED LITERATURE

Although this study is primarily an evaluation of a plan of grouping pupils for instruction in reading, the related literature is selected not only for its coverage of recent findings in grouping practices, grouping for reading with particular attention to inter-class grouping, but also for its account of findings regarding the relationship of reading to other language arts subjects such as spelling and written language.

Grouping Practices

Homogeneous and Heterogeneous

Historically, attempts were made to facilitate group instruction by providing the teacher with manageable numbers and grade ranges of pupils. The institution of grade schools bears witness to this. More recently, educational theorists and practitioners have experimented and argued in attempts to find the most efficient means of organizing graded groups of pupils for instruction. The relative merits and demerits of homogeneous and heterogeneous groupings have been debated at length. Still more recently the trend as

suggested by educationists such as Goodlad¹ tends to eliminate grade barriers and to extend the range of abilities within the classroom. As Goodlad states:

we have been around the clock at least once in the search for adequate patterns of school organization. We must avoid going around again in the same old way and coming up with the same old, unsatisfactory answers. But we most certainly will go around again unless we develop a framework for appraising new patterns².

In spite of the apparent dichotomy, homogeneous and heterogeneous grouping, there are times in every classroom under both types of organization when the entire class works as a unit, and there are times when even within established groups, there will be further subgrouping.

As Cummin declares:

Today we know that there is really no such a thing as a homogeneous group. The extent of heterogeneity may be reduced by the careful use of multiple criteria, but there still would remain a wide diversity of interests and abilities that cannot³ be measured by the screening devices we have today.

¹John I. Goodlad, "What about Nongrading our Schools?" The Instructor (New York: F.A.Owen Publishing Co., (May, 1961)) pp 6

²John I. Goodlad, "Appraising New Patterns of Organization for Reading Instruction", Proceedings of the Annual Conference on Reading, Reading Instruction in Various Patterns of Grouping, ed. Helen M. Robinson (Chicago: University of Chicago Press, 1959) pp 20-25.

³E.W. Cummin, "Grouping; Homogeneous or Heterogeneous?" Educational Administration and Supervision, XLIV (January 1958) pp 19-25.

Whether heterogeneous or homogeneous grouping is adopted, differences among thirty pupils in any classroom will be obvious. Homogeneous grouping only serves to reduce the wide range of differences. The primary purpose of grouping pupils for instruction is to promote differentiation of instruction according to pupils' individual needs and abilities.

The opinion of experts.

Studies in psychology and child growth have demonstrated many fundamental individual differences in children. The experts disagree about how many of these differences result from inherited limitations and how many result from variations in early experiences and opportunities in and out of school; but no one seriously doubts that the differences do exist or that they must be faced by the educator. Woodring⁴ offers six ways in which to deal with these individual differences. He suggests that it is necessary to select a form of ability grouping to provide better learning situations for all types of learners. As Spache⁵ points out, it must be made clear that the term "homogeneous

⁴P. Woodring, "Ability Grouping, Segregation and the Intellectual Elite." School and Society, LXXXVII (April 1959) pp 164-65.

⁵George D. Spache, Toward Better Reading (Champaign, Illinois: Gerrard Publishing Co., 1963) p 134.

grouping" is not synonymous with "ability grouping". Ability grouping as measured by mental tests forms a group homogeneous in one particular detail (intelligence) and ignores the significant differences in subject matter fields, social maturity and special ability.

Grouping of some one type is now accepted practice in most schools. Administrative organizations favoring heterogeneous grouping are widely used, but there is a trend toward a more homogeneous grouping practice. Each type has advantages and disadvantages. With increased awareness of individual differences plus the development of the technical knowledge necessary to determine how we learn an attempt must be made to find the best type of grouping in order that we may apply what we have learned. Smith⁶ feels that we know far more about how children learn than we apply in our schools. As this study is a project to determine statistically the merits of a grouping plan it is more pertinent to examine research findings than to indulge in theoretical speculation.

⁶Lois Smith, Association for Childhood Education International (Washington, D.C., 1962) pp 39-45.

Research findings

Reviewing research reports of education projects is extremely complex since not only are there unlimited aspects of the educative process to be considered but there are numerous patterns to follow in reporting the research projects. In reviewing the research findings on grouping practices, little conclusive evidence can be anticipated regarding the advantages of homogeneous or heterogeneous grouping.

The grouping movement, which boomed in the twenties and early thirties and dwindled in the next decade, has risen strikingly again so that samplings show that a high proportion of schools are grouping extensively. Many of these grouping practices go unreported but research projects relating to grouping have shown a tremendous up-surge in recent years.

Koontz⁷ carried out an experiment with fourth grade pupils grouped homogeneously by subject-matter achievement. They received instructions using material selected according to their achievement level. He found no significant difference between this group and a heterogeneous group of fourth graders who had received instruction with fourth

⁷William F. Koontz, "A study of Achievement as a Function of Homogeneous Grouping," Journal of Experimental Education, XXX (1961 December) pp 249-53.

grade material. The experiment was conducted for one year which, according to Ekstrom⁸ is an inadequate duration of a study. He maintains that the probable error of the reported test scores is frequently greater than the normal differences in scores for the period of the experiment.

Rudd⁹ attempted to increase homogeneity of groups by transferring pupils from one group to another. He found no significant improvement in attainments as the groups tended to become more homogeneous. Rudd's experiment, carried out in Britain where streaming until recently has been common practice for many years, resulted in traumatic effects on pupils transferred which may account for the lack of improvement in attainment.

Using various devices to secure greater homogeneity of pupils by applying criterion scores of grade III pupils, Clarke¹⁰ found the devices of limited value as they rarely reduce variability by more than twenty per cent. The most

⁸R. B. Ekstrom, "Experimental Studies of Homogeneous Groupings: A critical Review," School Review, LXIX (1961) pp 216-226.

⁹W. C. A. Rudd, "The Psychological Effects of Streaming," British Journal of Educational Psychology XXVIII (1958) pp 28-47.

¹⁰S. C. T. Clarke, "The Effect of Grouping on Variability in Achievement at the grade III level." Alberta Journal of Education Research, IV (September 1958) pp 162-7.

encouraging findings were found in grouping for reading.

Summaries of Research findings

The problem of equating and synthesizing research findings regarding grouping practices is extremely complex. According to Passow¹¹ this complexity is due to the fact that many studies vary in scope of aim and purpose: they vary in size of classes involved and in the duration of the study; studies differ in adequacy of the selection of bases and in means of matching experimental and control groups; studies differ in the instruments used in evaluating changes in pupils. Passow's findings emphasize the positive aspects of grouping. He relates that research evidence shows that pupils receiving instruction under a homogeneous system of grouping benefit more than those receiving instruction under heterogeneous grouping.

Otto¹² states that experimental studies of ability grouping have been fraught with such difficulty relating to the many variables to be controlled and the diffused concepts about grouping that it can hardly be said that

¹¹Harry A. Passow, "The Maze of Research on Ability Grouping," Educational Forum, XXVI (March 1962) pp 281-88.

¹²H. J. Otto, "Homogeneous Grouping," Encyclopedia of Education Research, (New York: MacMillan & Co., 1950) pp 376-78.

ability grouping has been evaluated experimentally. He maintains that the summaries of existing studies slightly favor ability grouping where standards, materials and methods have been adapted to the group.

Daniels,¹³ basing his findings on teacher surveys, considers streaming educationally sound, but he has statistical findings to show actual advantages to the non-streamed groups. He claims, however, that for every scientific statement made in support of homogeneous grouping there is an opposed statement made on grounds of research equally painstaking. Anderson,¹⁴ Kauffman,¹⁵ and Worlton¹⁶ agree that according to research findings there is a need for ability grouping if we are to ensure

¹³J. C. Daniels, "The Effects of Streaming in the Primary School II," British Journal of Educational Psychology, XXXI (1961) pp 119-127.

¹⁴Robert H. Anderson, "Ungraded Primary Classes," Education Digest, XXI (November 1947) pp 55-56.

¹⁵Merle Kauffman, "Advantages and Disadvantages of Different Patterns for Grouping," Proceedings of the Annual Conference on Reading, Reading Instruction in Various Patterns of Grouping, ed. Helen M. Robinson (Chicago: University of Chicago Press, 1959) pp 167-171.

¹⁶J. T. Worlton, "The Why of Homogeneous Classification," Elementary School Journal, XXXIX (1926-27) p 265.

the best possible situation for instruction which considers individual differences.

Ekstrom¹⁷ found thirteen studies which favored homogeneous grouping but he found no consistent pattern for effectiveness relating to age, ability level, course content or method of instruction. On the other hand, Wilhems and Westley¹⁸ found data to suggest that the evidence in favor of ability grouping is slight and bears no relation whatever to the popular expectation that it signals a change in administrative organization. They found no evidence to prove that the top group would benefit from a form of ability grouping.

According to the summaries of research findings reviewed it is apparent that no conclusive evidence is available regarding the merits of grouping pupils for instruction. Variables, such as materials and methods used, and age and ability of pupils strongly influence the effectiveness of grouping practices. These same variables must be recognized in more specific types of

¹⁷Ekstrom, loc cit.

¹⁸Fred I. Wilhems and Dorothy Westley-Gibson, "Grouping: Research Offers Leads," Educational Leadership XVIII (April 1961) pp 410-13.

grouping such as grouping for instruction in reading.

Grouping Practices Relating to Instruction in Reading

Since it is not the purpose of this study to evaluate the merits of various forms of organizational groupings but rather to examine grouping for instruction in reading we move to a review of the literature in this area. Wolfe¹⁹ describes five different patterns of grouping for use with basal readers. Shane,²⁰ in an excellent summary, lists thirty-two different grouping procedures, many of which can be adapted to the teaching of reading. Attention is directed to findings dealing with the type of grouping commonly referred to as inter-class grouping, where pupils are grouped for reading periods on the basis of reading ability regardless of normal grade status.

Inter-class grouping

Research reports on the effectiveness of inter-class grouping in reading has produced a considerable amount of literature reporting opinions but relatively few experimental studies have been made available. Unfortunately the conclusions drawn by experimental researchers range from

¹⁹J. B. Wolfe, "Values and Limitations of Different Patterns of Grouping for Basal Instruction." Conference on Reading, (Chicago: University of Chicago Press, 1957) pp 207-11.

²⁰Harold G. Shane, "Grouping in the Elementary School," Phi Delta Kappan, XLI (April 1960) pp 313-19.

enthusiastic acceptance to tentative rejection of the plan so that it appears there is still a great deal of "circling the clock."

Barbe and Waterhouse²¹ reported good results from a six month experiment in which 780 fourth, fifth, and sixth graders were grouped and taught reading in homogeneous groups. They emphasize the necessity of the teachers' believing in the program of inter-class grouping and being willing to exert the initial effort necessary to make such a program a success.

Aaron et al²² concluded that in a fourth grade group of 107 children, cross-class grouping was more efficient in terms of teacher and pupil energy than the familiar within-class grouping. Their experiment, conducted over a six month period, used six groups with three teachers. Each teacher had more time to prepare for daily lessons since she had two groups rather than three or four.

²¹Walter B. Barbe and Tina S. Waterhouse, "An Experimental Program in Reading," Elementary English, XXXIII (1956) pp 102-104.

²²I. E. Aaron, Francis Goodwin and Vada Kent, "Fourth grade Teachers Experiment with Cross-Class Grouping for Reading Instruction," Elementary English, XXXVI (1950) pp 305-307.

Hart²³ reported significantly increased achievement in reading from an experiment that involved grades four, five and six for a period of one year. He suggested that this experimental evidence gives strong support to those teachers and administrators who believe ability grouping has merit and deserves serious consideration.

A different opinion is expressed by Bremer,²⁴ who compared the reading progress made by first grade children in heterogeneous groups with progress made by children in groups where the ability range had been narrowed. The only significant difference he found was with high readiness pupils who appeared to profit when instruction was directed to a broadened range of ability in the classroom. He suggests that the results of experimental studies are inconclusive concerning the different plans of grouping to provide instruction in reading for children of different readiness status.

²³Richard H. Hart, "The Effectiveness of an Approach to the Problem of Varying Abilities in Teaching Reading," Journal of Educational Research, LII (February 1959) pp 228-31.

²⁴Nevill Bremer, "First Grade Achievement Under Different Plans of Grouping," Elementary English, XXXV (1958) pp 324-6.

Edmiston and Benfer²⁵ found that narrowing ability range within a class did not result in better reading for grades five and six. They were able to show that children in classes with an intelligence range of forty points made significantly better progress in reading than did children in classes where the range in intelligence had been narrowed to thirty points. For their experiment they used 462 pupils and 16 groups from which all slow learners were eliminated.

Experimental studies on inter-class grouping report little improvement in reading results when pupils are grouped for reading according to general ability. Successful results in improved reading when pupils are grouped for instruction in reading depend, in part, on teacher motivation. Several studies concluded that grouping pupils for instruction in reading stimulated teachers to increase their efforts.

Intra-class Grouping

A common practice of grouping for reading, particularly in the elementary school, is to divide pupils within a classroom into three or four groups according to ability to read. The teacher plans her lessons daily, using basal readers and a wide selection of materials for pleasure reading.

²⁵Robert W. Edmiston and John G. Benfer, "The Relationship Between Group Achievement and Range of Abilities Within the Groups," Journal of Educational Research, XLII (1949) pp 547-48.

She follows a pattern of continuous, sequential development of skills, attitudes and interest. This self-contained classroom provides for flexible grouping and opportunities for extended reading periods to include the whole group and to encompass all content areas.

In a survey of basic reading grouping practices used by sixty-six teachers of grades II, III and IV, Groff²⁶ found little actual flexibility in the operation of the reading groups. He found that the teachers averaged only 5.4 changes in grouping over a 13 week period. The fact that most changes that did occur were made in the first few weeks indicates even less flexibility after groups are once established.

A trend among teachers of reading is the formation of groups based on pupils' specific needs or performances in various reading skills. Groups are formed temporarily as teachers' observations or informal tests indicate that certain pupils would profit from a particular type of instruction. Squire²⁷ feels that this type of intra-class grouping is relatively effective since it is a step toward

²⁶Patrick Groff, "A Survey of Basal Reading Grouping Practices," The Reading Teacher, XV (January 1952) pp 232-35.

²⁷James R. Squire, "Individualizing the Teaching of Literature," English Journal, XLV (September 1956) pp 314-19.

individualization. A study by Jones²⁸ demonstrates that individualized work in reading is consistently superior to skills grouping amongst fourth grade pupils. She feels that the artificial arrangement often superimposed by the teacher in various forms of skills grouping fails to motivate the group.

Hester²⁹ believes that one of the best plans of intra-class grouping in reading is based on pupil interest and activity. Groups are formed to pursue work related to a class unit or project. Reading skills are used in normal, applied relationships with the rest of the curriculum. Little research evidence is available to demonstrate the merits of interest grouping. The plan requires a high degree of teacher competence as well as considerable teacher planning and the bountiful supply of reading materials.

Individual differences in reading performance are uncomfortably great and increase as pupils advance in grades. The teacher of yesterday was protected from some of this range by severe promotion policies and she resolutely

²⁸Daisy Marvel Jones, "An Experiment in Adaptation to Individual Differences," Journal of Educational Psychology, XXXIX (May 1948) pp 257-72.

²⁹K. B. Hester, "Every Child Reads Successfully in a Multiple-Level Program," California Journal of Secondary Education Association, LIII (October 1952) pp 86-89.

ignored much of the non-conformity found among the pupils. The teacher of today has gone beyond the rigid three-group, instructional system of a few years ago to develop flexible combinations of whole-class reading, individualized reading and group-reading activities of several kinds into harmonious patterns that fit their particular class.

The Joplin Plan of Grouping.

The experimental group for this study received reading instruction in a form of grouping that has been identified with the Joplin Plan. Although only a little evaluative evidence exists of the effectiveness of Joplin-type plans, a look at some of the related literature may prove valuable.

The Joplin Plan originated in the Irving Elementary Schools at Joplin, Missouri in the 1952-53 school year. The plan became widely known through television and press publicity. No clear-cut definition of the Joplin Plan is available since many modifications of the original have been made. Fay³⁰ describes the Joplin Plan as an attempt to departmentalize the elementary self-contained classroom.

³⁰ Leo C. Fay, "Patterns of Grouping in the Content Areas," Conference on Reading, (Chicago: University of Chicago Press, 1959) pp 63-68.

As Ellis³¹ has pointed out, he classes the plan as inter-class grouping, while Ramsey³² labels it cross-class grouping. The original plan grouped pupils for reading instruction by their ability level in reading, disregarding their assigned grade level. The reading lesson in a school is time-tabled at the same period for the whole school. When the time for reading arrives children go to their designated reading groups. For example, a fourth grader who reads on a third grade level will receive instruction in reading with other children reading on the third grade level.

Morgan³³ concluded from an experiment of one year with 180 grades IV and V pupils that, for the single school where the experiment was run, the Joplin Plan for reading did produce significantly superior results where teachers had been randomly assigned to experimental and control groups, and where sex, method, intelligence and initial

³¹John F. Ellis, "An Evaluation of Inter-class Grouping for Reading Instruction," The B.C. Teacher, XLI (February 1962).

³²Wallace Ramsey, "An Evaluation of a Joplin Plan of Grouping for Reading Instruction," Journal of Educational Research, LV (August 1962) pp 567-572.

³³Elmer F. Morgan, Jr., and Gerald R. Stucker, "The Joplin Plan of Reading vs A Traditional Method," Journal of Educational Psychology, LI (April 1960) pp 69-73.

reading ability had been carefully controlled. He suggests that the major advantage of such a plan is the non-threatening situation set up by the organization of the Joplin Plan which allows the child to receive maximum positive reward or feedback from reading material which he can now read.

Dominy³⁴ describes the progress made at Lancaster on a program based on the Joplin Plan. He notes that a fifty per cent increase in the number of books checked out of a local library and a considerable improvement in spelling can be attributed to the Plan. Since Dominy's report is interim and not based on statistical findings we must wait for more conclusive evidence before judging the merits of his research. Ramsey³⁵ sets out to determine the effectiveness of the Joplin Plan by predicting expected gains for the various levels. He found in grades IV, V and VI that the expected reading gains were reached. In the upper third of the classes in intelligence, he found gains equal to and greater than expected except in grade IV vocabulary. For those children in the lower third in intelligence, no gains were as great as expected, except

³⁴Ernest L. Dominy, "The Joplin Reading Program at Lancaster," Texas Outlook, XLIII (July 1959) pp 16-17,25.

³⁵Ramsey, loc. cit.

in grade V. However, Ramsey³⁶ recognizes that in the instances in which gains exceeded expectation the excess of gains over expectancy could not be attributed totally to the grouping used. There were several variables in the situation that were not measured.

Harris³⁷ reports that the majority of the published accounts report good results in raising the reading ability of the pupils instructed under Joplin-type plans. He agrees with Dawson and Bamman³⁸ that one of the main advantages of the plan is that children gain status as a result of being able to read successfully at the independent reading level to which they have been assigned.

A major disadvantage of the Joplin Plan is the necessity for a set and limited period for reading instruction which may interfere with the elasticity of programming or may result in the termination of a lesson before it is complete. There is also the danger that if pupils come from different rooms, the teacher's contact with many of them will be limited and instruction becomes primarily based on materials and may neglect specific needs. Close communication

³⁶Ibid

³⁷Albert J. Harris, How to Increase Reading Ability. (New York: David McKay Co. Inc. 1961) pp 107-109.

³⁸Mildred A. Dawson and Henry A. Bamman, Fundamentals of Basic Reading Instruction. (New York: David McKay Co. Inc. 1963) pp 140-142.

between teachers is essential or there is apt to be serious interference with integration or correlation of the work of the pupils. Fay³⁹ points out that reading tends to be divorced from the rest of the curriculum and affords little opportunity to carry over into the reading of content subjects the specific skills taught in a reading period.

Floyd⁴⁰ points out that one of the most important factors to consider in setting up groups for reading instruction is the criteria applied in making decisions on the pupils to be assigned to a certain reading level. The original Joplin Plan used the results of a test of basic skills, a silent reading comprehension test, previous school records and cumulative-record data, as well as the teacher's knowledge of the child. Clymer⁴¹ agrees that any attempt to achieve homogeneous groups by the use of

³⁹Fay, Loc Cit.

⁴⁰Cecil Floyd, "Meeting Children's Reading Needs in The Middle Grades: A Preliminary Report," Elementary School Journal, LV (October 1954) pp 99-103.

⁴¹Theodore Clymer, "Criteria for Grouping for Reading Instruction," Conference on Reading, (Chicago: University of Chicago Press, 1959) pp 43-48.

intelligence tests is doomed to failure. Sprietsma⁴² writes that grouping based on an intelligence test or on a survey reading test is generally inadequate as a basis for planning reading instruction. He finds that better results are obtained following a plan which gives the maximum attention to individual reading differences once the reading classes are established.

The Joplin Plan of grouping for instruction in reading indicates advantages for the pupil as he receives instruction at a level which he can comprehend. Extreme care is necessary in the setting up of reading groups. Variables such as sex, intelligence and initial reading ability are only a few of the points to be considered in dealing with the individual differences of the pupils who will make up the groups. Considerable administrative acuity is necessary not only in the selection of pupils for the reading groups but in maintaining a unit of the reading groups within the school with close communication between teachers.

⁴²Lewis R. Sprietsma, "Homogeneous and Heterogeneous Grouping," Conference on Reading, Reading Instruction in Various Patterns of Grouping, ed. Helen M. Robinson (Chicago: University of Chicago Press, December 1959) pp 36-38.

Relationship of Reading to the Elementary School Curriculum

One of the major aims of the elementary school curriculum is to teach the child to read. School success is closely related to proficiency in reading. As Harris points out:

reading is unique among school activities in being both a subject of instruction and a tool for the mastery of other phases of the curriculum.⁴³

There is a close relationship among the various forms of oral and written communication resulting in an integrated approach to the teaching of the language arts. The language arts - speaking, listening, reading, writing and spelling - are related skills because they employ common word symbols. Listening and reading are at the receiving end of language instruction, writing and speaking at the transmitting end. Successful teaching of reading must necessarily be related to all other phases of the language arts.

Research workers have found a high degree of relationship among the several language arts areas, Hildreth,⁴⁴

⁴³Harris. Loc Cit

⁴⁴Gertrude Hildreth, "Interrelationships Among Language Arts," Elementary School Journal, XLVIII, (1948) pp 538-49.

supported by Seegers,⁴⁵ claim that reading achievement is conditional and depends on the extent to which one has achieved or achieves growth in general language ability. McCarthy,⁴⁶ in outlining the language development of the child, shows that the curve indicating growth and development of reading skills shows a close parallelism to the growth curves of other language arts areas.

Spelling

Spelling and reading are related through vocabulary. Learning to read and to spell both require the ability to discriminate among words visually. Spelling requires word study; so does word recognition in reading. The generalizations about word forms and word building which are learned in reading are the same as those needed in spelling.

Achievement in spelling, according to Artley,⁴⁷ is related to an understanding of the meaning of words, though there is a lack of agreement among the experts as to

⁴⁵Conrad Seegers, "Recent Research in Vocabulary Development." Elementary English Review, XXIII, (February 1946) pp 61-67.

⁴⁶Dorothea McCarthy. "Language Development in Children," Manual of Child Psychology, (New York: John Wiley) p 46.

⁴⁷Sterl A. Artley, "The Improvement of Spelling Ability," Elementary School Journal, XLIX (November 1948) pp 137-148.

the extent of this relationship. Hughes⁴⁸ studied the relationship among eight selected language abilities obtained from the results of a series of tests given to pupils of the fifth grade level. He found a correlation of .49 between spelling and reading. His coefficient of correlation is deemed even more significant since the influence of intelligence has been removed through his method of selecting his 196 samples. Russell⁴⁹ used a word recognition test on 135 pupils who spelled low third grade level to high fifth grade level. He concluded that spelling ability is one of a constellation of language arts abilities. Russell⁵⁰ found a correlation of .84 between spelling and the factors that enter into reading comprehension, though in his study, the influence of intelligence was not removed. He also states that there is no evidence that poor spelling is necessarily caused by deficiencies in reading or vocabulary.

⁴⁸Vergil H. Hughes, "A Study of the Relationship Among Selected Language Abilities," Journal of Educational Research. XLVII, (October 1953) pp 97-105.

⁴⁹David H. Russell, "Spelling Ability in Relation To Reading and Vocabulary Achievement," Elementary English Review. XXIII (January 1946) pp 32-37.

⁵⁰Ibid

The findings of Spache⁵¹ do not concur completely. Spache⁵² believes that a low meaning vocabulary is more likely to be a cause of spelling difficulty than low reading ability, although he quotes the same mean differences between spelling and vocabulary and spelling and reading abilities.

Substantial correlations between scores in spelling and scores in reading comprehension and vocabulary were found by Townsend,⁵³ Perry⁵⁴ and Waldman.⁵⁵ Townsend⁵⁶ found the highest correlations between spelling and vocabulary. Waldman⁵⁷ feels the relationship between reading and spelling

⁵¹George Spache, "Spelling Disability Correlater 1 - Factors Probably Causal in Spelling Disability," Journal of Educational Research, XXXIV (April 1941) pp 561-86.

⁵²Ibid

⁵³Agatha Townsend, "An Investigation of Certain Relationships of Spelling with Reading and Academic Aptitude," Journal of Educational Research, XL (February 1947) pp 465-71.

⁵⁴Ira F. Perry and Ida E. Morrison, "Spelling and Reading Relationships with Incidence of Retardation and Acceleration," Journal of Educational Research, LII (February 1959) pp 222-227.

⁵⁵John Waldman and Francis O. Triggs, "The Measurement of Word Attack Skills," Elementary English, XXXV, (November 1958) pp 459-63.

⁵⁶Townsend, loc cit

⁵⁷Waldman, loc cit

remains about the same in each grade (4-8) but Perry⁵⁸ found a correlation of .75 for the eighth grade and .85 for the third grade. The closer correlations were found in the lower grades.

Using word phonic, nonsense word phonic and sound phonic tests, Tremplin⁵⁹ found the correlations between phonic knowledge and spelling were somewhat higher than between phonic knowledge and reading. Her experiment reported the results of 318 fourth grade pupils. Rudisill,⁶⁰ working with an equal number of third grade pupils shows a correlation of .71 between reading and phonic knowledge and .69 between spelling and phonic knowledge. She maintains that her correlations suggest that there were common factors between reading, spelling and phonic knowledge independent of intelligence.

Though intelligence is an important factor in conditioning spelling ability, its potency does not seem so

⁵⁸Perry, loc cit

⁵⁹Mildred C. Tremplin, "Phonic Knowledge and its Relations to the Spelling and Reading Achievement of Fourth Grade Pupils," Journal of Educational Research, XLVII (February 1954) pp 441-54.

⁶⁰Mabel Rudisill, "Interrelationships of Functional Phonic Knowledge, Reading, Spelling and Mental Age." Elementary School Journal, LVII (February 1957) pp 264-67.

significant as certain factors, particularly vocabulary, word recognition and perceptual speed. In reading instruction, one proceeds from the written word through the spoken form to the meaning, while in spelling instruction, the procedure is from meaning to written symbol. Betts⁶² agrees with Furness⁶³ that reading is a process rather than a subject and that reading and spelling are facets of one learning area called language. Betts⁶⁴ feels that a substantial level of reading achievement is a pre-requisite to systematic instruction in spelling.

Research findings reveal that within the area of language, spelling is related to reading in that both reading and spelling skills are gained through instruction in phonics, word structure techniques, vocabulary and comprehension skills. This does not mean that reading can be taught through instruction in spelling nor that spelling can be taught through instruction in reading. Learning to read and to spell is learning in the language area and as

⁶²E. A. Betts, "Interrelationships of Reading and Spelling," Elementary English Review, XXII (January 1945) pp 12-23.

⁶³Edna Sue Furness, "Improving Reading Through Listening," Elementary English, XXXIV (May 1957) pp 307-311.

⁶⁴Betts, loc cit

such the inter-relationship of the mastery of skills required for either spelling or reading must be recognized.

Vocabulary

Ability to read is necessary to obtain appropriate meaning from the printed page. Being able to recognize the printed word is valuable only insofar as it makes comprehension possible. Reading comprehension bears a close relation to the amount of verbal ability. Traxler,⁶⁵ in an investigation of the relationship between vocabulary and general achievement, found a high correlation between paragraph meaning and word meaning.

Some degree of vocabulary growth is inevitable for almost all individuals but if this learning is incidental, unplanned or undirected it is relatively slight. Sutton⁶⁶ found that intensive vocabulary efforts at the primary levels appear to effect other reading skills such as word recognition, meaning, vocabulary and comprehension. These results are logical since the training occurred during an early period of learning at which time dramatic gains may

⁶⁵Arthur W. Traxler, "The Relationship between Vocabulary and General Achievement in the Elementary School," Elementary School Journal, XLV (1945) pp 331-3.

⁶⁶Rachel S. Sutton, "The Effect of Vocabulary Building on Reading Skills," Elementary School Journal, LIV (October 1953) pp 94-97.

often be expected.

One of the most important influences upon vocabulary growth is verbal intelligence. The child who develops a broad vocabulary at an early age is accepted as possessing superior verbal intelligence. Most intelligence tests include measures of verbal ability. According to Harris

when a child has a small meaningful vocabulary, the first possible cause to investigate is intelligence. Low general intelligence shows itself clearly in retarded language development and difficulty in understanding and acquiring the meanings of words.⁶⁷

The development of reading vocabulary, which is both extensive and accurate, is a necessary phase of good comprehension. Vocabulary growth may be realized through sustained periods of training, employing various vocabulary building techniques, as factors such as lack of interest and verbal intelligence have a great deal of influence on vocabulary improvement.

Written Language

Some confusion may exist regarding the term "written language." The term is clarified when Hildreth⁶⁸ describes one of the objectives of elementary education as

⁶⁷Harris, loc cit

⁶⁸Hildreth, loc cit

to teach children to express their thoughts and feelings clearly in writing, and to improve each year in the ability to use this skill for purposes that require written expression.⁶⁹

She uses the terms written expression and writing in her quotation which must be considered synonymous with written language or composition.

Written language is ordinarily the last of the common forms of language communication to develop, the skill that is learned later than oral comprehension, speech and even reading. It depends upon oral language and comprehension, it is associated with skill in reading, and it is related to the steady growth of the tools of spelling and handwriting.

Pupils learn to write from reading correctly written content which illustrates sentence form, syntax, punctuation, diction and correct spelling. Reading and written language are each dependent on the other and as Harris explains

extensive reading broadens the child's range of knowledge, enriches his vocabulary, and provides him with desirable models of style that he can imitate. On the other hand, a lack of ability to understand and use good English will naturally handicap a child in understanding what he reads.⁷⁰

⁶⁹Ibid

⁷⁰Harris, loc cit p.6

Hughes⁷¹ concluded from his study of the relationship among selected language abilities that a common core of general language ability appears to underline the writing skills such as spelling, language usage and reading. He did not attempt to determine a relation between language ability and the more abstract language skills such as organization in sequence or use of vivid words. Hughes⁷² also concluded that the skills and understanding that make for effective written language bear a positive relation to those that make for effective reading.

Although the skills of written language are ordinarily the last of the common forms of the language arts to be learned they are a definite part of the elementary school curriculum. Written language skills other than the mechanics of writing are difficult to measure, hence little research evidence is available regarding the relationship of written language to other aspects of the language arts.

Summary Statement

The related literature has reviewed the research findings and reported the opinions of the experts on

⁷¹Hughes, loc cit

⁷²Ibid

the topic of grouping pupils for instruction with special attention to grouping for instruction in reading and more particularly to the Joplin Plan of grouping for instruction in reading. The relationship between reading and the other language areas of vocabulary, spelling and written language is considered because a high level of correlation exists among the various language abilities.

CHAPTER III

THE PLAN OF RESEARCH

This chapter presents an explanation of the policies affecting the population sample, the plan of grouping pupils for instruction in reading, followed by an account of the selection of the population sample. A summary of the test used and the explanation of the treatment of the data will conclude Chapter III.

Explanation of Policies Affecting Population Sample

Before describing the procedures used to determine the population sample and the treatment of the data, a brief outline of the pertinent features of the city school system is necessary. This outline gives a description of the language arts requirements for the system, an explanation of a plan for the grouping of pupils for reading, and a survey of the testing program for the system. Since the study extends beyond the field of reading into the related field of spelling and language, a short explanation of the language program is given. The description of the grouping is essential since it is the basis of the experiment. The testing program is reviewed since the comparisons are made on the intelligence and reading test results obtained and

recorded annually in the cumulative records by the system.

Except for results in the spelling and written language areas the data for this study have been completely taken from the records of a city school system. The accumulation of scores represents a cross-section of the operation of the system as reflected in the progress records of grades IV, V and VI pupils.

This project is based on the results of tests given to all of the pupils in a working system. These pupils represent the total elementary school population of an urban centre. There is merit in evaluating education practices from a working system since it is apparent that the practices are functional. Creating hypothetical situations for experimental purposes may involve doubt as to their practicability in an actual working unit, therefore, as far as is possible, this study is based on scores obtained under normal conditions and on random samples drawn from one system currently in operation. No artificial situations whatever have been employed in the compilation of the data for this study.

Language Arts Requirements

Reading is one of the language arts and is developed in correlation with other language arts such as listening, speaking and writing. The child begins at an early age to master the various forms of communication which are so closely interrelated. By the time the pupil reaches grade IV, V or VI he has completed the period of rapid progress in the fundamental attitudes, habits and skills required to learn to read and to write and is in the stage of enriching his experiences and cultivating important attitudes and tastes. It was felt that these attitudes and tastes could be measured through written language, spelling and vocabulary prowess as well as through reading ability. It is for this reason that this study evaluates a plan of grouping for reading by including comparisons dealing with other aspects of the language arts than reading.

In conjunction with the basic requirements set down by the Department of Education curriculum guide, a few more specific details recorded by the system made up the language arts program. The entire population was affected by these policies.

The policies which affect this study, as outlined in the Handbook of Instructions (see appendix) for the school system, included suggestions as to allotment of

minimum instruction time. In the first grade, reading made up the major portion of the language arts program. Most language and enterprise activities were correlated with reading. Teachers of the second and third grades were expected to time-table about five hours a week to directed reading instruction, with additional time for instruction in phonics and other reading activities. Pupils of the fourth, fifth and sixth grades were allotted from two hundred twenty-five to three hundred minutes a week for reading, including literature. Formal language instruction was held for a period of thirty minutes daily for grades two to six. These grades were expected to spend seventy-five minutes per week on word lists from their spellers with extra time for spelling from other subjects.

The prescribed textbooks and workbooks used by all the schools in the system for language arts include:

Reading.-

1. Curriculum Foundation Series (Toronto: W.J. Gage and Company)
2. Ginn Reading Series (Toronto: Ginn and Company)
3. Highroads to Reading (Toronto: Thomas Nelson and Sons (Canada) Ltd.)
4. Canadian Developmental Series (Toronto: Copp Clark Publishing Company Ltd.)

5. Canadian Parade Readers (Toronto: J.M. Dent and Sons Ltd.)

The change from the Curriculum Foundation Series to the Ginn Series was begun in 1959 for grade I, in 1960 for grade II and in 1961 for grade III. The workbooks for both series were available. A pupil of grade IV, V or VI was expected to be familiar with the reader for his grade in each of the series mentioned in three, four and five above. No workbooks to accompany these readers were available.

Language.-

1. Language for Meaning Series (Toronto: Thomas Nelson and Sons (Canada) Ltd.)
2. Language Journeys (Toronto: The MacMillan Company of Canada Ltd.)
3. Thorndike-Barnhart Dictionary (Chicago: Scott, Foresman and Company)

The change from the Language for Meaning Series to the Language Journeys was made for grades III to VI in 1960. The "Beginning" dictionary was used in grade IV and the "Junior" dictionary in grades V and VI.

Spelling.-

Pupils of grades II to VI used word lists from

The Pupil's Own Vocabulary Speller (Toronto: The MacMillan Company of Canada Ltd.) for their spelling study.

Library.-

Since all of the schools in the system had a school library equipped with books provided on a per capita grant, it must be assumed that there would be no significant difference in the availability of library books for the pupils regardless of the school attended.

The Plan for Grouping Pupils for Instruction in Reading.

Inter-class grouping.-

In 1958 a ten room elementary school of grades I to VI initiated a plan for grouping pupils for instruction in reading. Pupils were originally placed in reading groups according to their ability to read interpreted by reading tests given at the end of the previous grades as provided by the testing program. This was a version of inter-class grouping based on a modification of the Joplin Plan.

Pupils from several successive grades were grouped according to reading ability and received instruction from a teacher designated to work with a particular level. During the reading period pupils went to the appropriate classroom for reading instruction, returning to their home-rooms for the remainder of the day's activities. As far as

possible pupils from a grade were kept in reading groups with their homeroom teacher.

Adjustments were made between groups when teachers became familiar with the pupils and could evaluate their reading on a daily basis. Except in extreme cases pupils were not placed in a reading group which was more than two grades above or below their own working grade. This helped to overcome the problem of attempting to read material of little interest. The extreme cases included the individuals who were of exceptional mental ability.

Adjustments could be made between groups at any time but usually followed a pupil evaluation by report card issued every two months. Promotions were encouraged. Demotions became negligible after the first year of grouping. Pupils already selected for a group continued to progress under the specialized instruction for that group; new pupils were less prone to demotion as methods of selection were improved with experience.

The method of instruction used in teaching reading depended on the individual teacher who applied the materials available in her particular school as she found most effective to her methods. One school provided the following aids in addition to the basic reading material supplied:

1. Reading Through Phonics (Toronto: J.M. Dent

- and Sons (Canada) Ltd. (1955)), Books I and II.
2. Diagnostic Reading Workbook (Columbus, Ohio: Charles E. Merrill Books Inc. (1958)), Books IV, V and VI.
 3. Reading Skilltexts (Columbus, Ohio: Charles E. Merrill Books Inc. (1955)), Books III, IV, V and VI.
 4. McCall-Crabbs Standard Test Lessons in Reading (New York: Bureau of Publications, Teachers College, Columbus University (1950)), Books B and C.
 5. SRA Reading Laboratory (Toronto: Thomas Nelson and Sons (Canada) Ltd., (1959)).

In 1959 other schools introduced the modified Joplin plan and by 1963 six elementary schools in the system were using the plan. The schools using the plan for two or more years provided the experimental group for this study.

Intra-class grouping.-

The schools which provided the control group for this study did not have a Joplin-type plan of grouping but did group on an intra-class plan. Within the class pupils were divided into groups for reading instruction according to reading ability as evaluated by the teacher. All groups received reading instruction from a program based on the

prescribed texts for the grade. The better readers usually completed the entire program while the weaker readers did not.

The Testing Program.

The pupils in all the schools within the system were administered reading tests in June of each year. These tests were given under the supervision of the principal who usually gave the test himself, but had the tests marked and the scores tabulated by the teachers. The principal also gave group intelligence tests to grades II, IV and VI in October of each year. Cumulative records of all the scores made by pupils of the system were filed in the central office.

The Population Sample

A brief description of the school population will be given before the details of the two groups, the experimental and the control, are given.

The sample for this study was drawn from the total urban elementary school population of 2230 pupils, Table I, of which 1040 pupils were in the fourth, fifth or sixth grade. Of these 1040 pupils, only 369 met the requirements for the population sample. The requirements necessary for a pupil to become a unit of the population were:

1. He must be in the fourth, fifth or sixth grade.
2. He must have attended the school in which he was registered on June 1, 1962, for at least three years prior to that date.
3. He must have been on a regular reading program e.g. not on an acceleration program.
4. He must have been in attendance when the group intelligence test was given.
5. He must have been in attendance when the group reading tests were given.

TABLE 1

ELEMENTARY SCHOOL POPULATION OF AN
URBAN CENTRE, MAY 31, 1962

School	Total for School	Grade					
		I	II	III	IV	V	VI
P	30	30
Q	379	74	51	59	43	85	67
R	223	50	37	36	41	30	29
S	227	51	58	50	68
T	326 ^a	42	62	46	67	43	66
U	182	41	27	21	30	31	32
V	97	29	22	18	15	13	..
W	374	78	68	74	55	67	32
X	313	51	55	49	60	67	31
Y	79	13	12	16	8	15	15
Total	2230	429	392	369	387	351	302

^aIncludes 29 in Special Classes

No attempt was made to differentiate between the requirements necessary to establish two groups for this study. The procedure used to enable a comparison to be made between the experimental and control group was in no way related to the method used to establish the intra-class system of grouping for reading instruction. The criteria necessary to select the population sample for this study applied to all schools but only those schools using the modified version of the Joplin Plan of grouping for reading instruction could qualify as 'experimental'.

Pupils were eliminated as samples for two main reasons:

1. Certain school populations could not be included since some schools began grouping during the three years prior to the study while other schools drew pupils from systems that had grouped by other plans, and could not qualify as either experimental or control.

2. Certain pupils could not be included as samples since they had not been in attendance for the required length of time or because they did not possess complete records of intelligence or reading scores during the required time.

Table 2 shows how the figures for the 369 pupils were selected to become the population sample for this study.

TABLE 2

THE POPULATION SAMPLE

	Grade			Total
	IV	V	VI	
Total Possible	387	351	302	1040
Eliminated by Item 1.	152	182	158	492
Eliminated by Item 2.	126	24	29	179
Total actual	109	145	115	369

The Experimental Group

The experimental group consisted of 203 pupils attending those schools within the system which grouped pupils for reading according to a modified version of the Joplin Plan. The selection of the samples for this group was determined by the requirements set down above.

The only difference between the selection of this group and the control group is that the experimental group was drawn from schools using a Joplin-type plan. Reading groups were established through a classification of the pupil by the following criteria:

1. A reading score obtained on tests administered by the city testing program.
2. An intelligence rating obtained from the city testing program.
3. Chronological age.
4. A rating in reading ability from a teacher evaluation.

A pupil thus selected and taken with other pupils reading at a level similar to his own formed a reading group. Instructional procedures were conducted within the experimental group according to the following generalizations:

1. Pupils met as a group for reading instruction, one hour each day, five days a week.
2. Methods of instruction were largely determined by the teacher in charge of the reading group, who was not necessarily a pupil's home-room teacher.
3. The basal reading program formed the core of the curriculum; some re-organization of subject content was made to correspond to the appropriate achievement level of the pupils.
4. Individuals within a reading group were continuously evaluated by tests and observation in

order to facilitate a re-classification of the pupil in another group when necessary.

Table 3 shows distribution of population sample in the experimental group.

TABLE 3

DISTRIBUTION OF PUPILS, EXPERIMENTAL
AND CONTROL GROUPS

Grade	Experimental			Control		
	IV	V	VI	IV	V	VI
Low	11	14	12	7	8	18
Average	30	56	25	32	31	32
High	11	28	16	18	8	12
Total	52	98	53	57	47	62

The Control Group

The control group was made up of pupils attending city schools operating under a conventional grade system when pupils received instruction in more or less heterogeneous groups and where selection was based primarily on chronological age and date of school entry. No attempt was made to group children of similar abilities in reading for instruction in reading outside the class. Any programming for reading instruction was done by the individual teacher under her own initiative. It must be assumed that instructional

procedures followed the common practice of a basal reading program. Usually classes were set up with some intra-class grouping. The majority of the pupils completed the prescribed reading for the grade while the lower level covered material appropriate to their level. Considerable whole-class reading was scheduled, permitting the entire class to participate in the lesson.

The 166 pupils making up the control group were distributed into levels and grades as indicated in Table 3.

Testing Procedures

The tests used, a description of these tests, and how they are used in the study will be explained in this section. Copies of all the tests can be found in the Appendix.

Description of the Tests Used

All the tests listed below were used in this study and are classed as two types: those from the city testing program, and those which were given in June 1962 to survey specific areas not previously evaluated and which were necessary for this study. These latter tests will be referred to as Other Measures.

Table 4 lists the names of the tests used and the year the tests were administered to the specific grade which became applicable in this study.

TABLE 4

TESTS FROM URBAN TESTING PROGRAM
USED IN STUDY

Test	Form	Administered		Applied to Grade
		Year	Grade	
Intelligence				
Otis Group Intelligence Scale	B	1959	II	IV
Otis Quick-Scoring Mental Ability Test	A	1960	IV	V
Henman-Nelson Test of Mental Ability	A	1961	VI	VI
Reading				
Gates Reading Tests	2	1960	II	IV
California Reading Tests	X	1960	III	V
	W	1961	III	IV
Nelson Silent Reading Test	B	1962	IV	IV
	B	1962	V	V
	C	1961	V	IV
	A	1960	IV	VI
	C	1961	V	VI
	B	1962	VI	VI
Vocabulary				
California Reading Tests	W	1961	III	IV
Nelson Silent Reading Test	B	1962	V	V
	B	1962	VI	VI

Intelligence Tests

The restriction of this study to the actual testing program of a working system necessitated the use of scores from three different intelligence tests. The test selected to represent the scores for the grade was the test which had been most recently administered to the pupils for that grade. For example, the Henman-Nelson Test of Mental Ability had been administered in the fall of 1961, and represents intelligence scores of pupils for the same school year as this study was made. (See Table 4)

In describing the intelligence tests it is not easy to determine the validity of the test since there is no exact criterion of mental ability on which the validity of the test can be measured directly.

The Otis Quick-Scoring Mental Ability Tests were designed by Arthur S. Otis¹ in 1929 for the purpose of measuring mental ability. Lefever states that the purpose

seems highly abstract and somewhat out of step with a modern definition of intelligence - thinking power or degree of maturity of the mind²

¹Arthur S. Otis, Otis Quick-Scoring Mental Ability Tests (New York: World Book Co., 1929)

²Welty D. Lefever, "Intelligence Tests: Otis Quick-Scoring Mental Ability Tests". The Fifth Mental Measurements Yearbook, ed. O.K. Buros (New Jersey: The Gryphon Press, Highland Park, 1959).

Kulhman points out that

the 'I.Q.'s' are not quotients but are obtained by subtracting a child's raw score deviation of the age norm from 100, if the score is below the age norm, and adding this deviation to 100, if the raw score is above the age norm. The resulting measures may be useful as true I.Q.'s but it is unfortunate that the author suggests applying the term 'I.Q.' to it. There is much arbitrary procedure in computing it. The difference is often considerable (1413).³

Two types of these tests were used. The Otis-Primary test is designed to test general mental ability from kindergarten to grade IV. The scale is made up of seven tests consisting of: Following Directions, Association, Picture Completion, Maze, Picture Sequence, Similarities, and Antonyms-Synonyms.

The Otis-Alpha test is designed for grades I to IV and consisted entirely of 90 groups of pictures and designs made up of four parts to each unit. Part of the test is given as a nonverbal test, since the directions for doing the sample exercise page apply to the whole test and pupils may be left to themselves to mark the picture which does not belong logically in the group. A verbal test requires that the pupil follow directions given orally by the examiner to

³F. Kuhlman, "Intelligence Tests: Otis Quick-Scoring Mental Ability Tests". The Nineteen Forty Mental Measurements Yearbook, ed. O.K. Buros (New Jersey: The Gryphon Press, Highland Park, 1941).

complete the 90 items by marking the correct response.

For a single grade the reliability coefficients of the nonverbal and verbal tests of the Alpha test are .68 and .71 respectively. The reliability of the total score (nonverbal plus verbal) is .81. These coefficients indicate that the nonverbal and verbal tests are of about equal reliability, but when combined they yield a total score that is appreciably more reliable than either one taken by itself. The reliability which, according to Kuder seems adequate for group comparison.⁴

According to Yates

the reliability coefficients quoted for these tests are not strikingly high. The quoted values vary according to the test examined and the grade of the children concerned. For the Alpha test coefficients of .87 and .88 are reported for two samples of third grade pupils. The standard error for this test is 4 points. In other words, the "true score" of one child in 20 is likely to depart from his obtained score by more than plus or minus 8 points of standardised score. It is clear, therefore, that the results of⁵ applying such a test should be interpreted cautiously.

⁴Fredric Kuder, "Intelligence Tests: Otis Quick-Scoring Mental Ability Tests." The Third Mental Measurements Yearbook, ed. O.K. Buros (New Jersey: Rutgers University Press, 1949) pp 248-250.

⁵Alfred Yates, "Intelligence Tests: Otis Quick-Scoring Mental Ability Tests." The Fifth Mental Measurements Yearbook. ed. O.K. Buros (New Jersey: The Gryphon Press, Highland Park, 1959) pp 499-500.

The only evidence of validity offered was in the reports of correlations of the Alpha Test with the Primary Examination and Grade Placement. Total scores compared give biserial coefficients of .65 and .86, respectively.

The Henman-Nelson Test of Mental Ability is designed for grades VI to IX and measured those aspects of mental ability which are important for success in academic work. The test is composed of a scrambled sequence of 90 five-choice items arranged in order of difficulty.

The odd-even method of computing correlations and their determining reliability coefficients indicates a reliability of .955 on Form A for grade VI. Evidence for congruent validity is presented in the form of correlations with several well known tests of intelligence. The median coefficient for all levels is .76; the range is .50 to .84. Validity indicated by a comparison with the Otis Test of Mental Ability for grade IX show a correlation of .776.

Lefever reports that

in the light of the author's contention that a single score will predict scholastic success as well as a more elaborate battery, perhaps the most

⁶V. A. C. Henman and M. J. Nelson, The Henman-Nelson Tests of Mental Ability. (Boston: Houghton Mifflin Company, 1957).

interesting evidence of validity is the series of correlations between Henman-Nelson I.Q.'s and achievement test scores on teachers' grades for separate subject matter areas. Following are the medians of the correlations reported at the various grade levels: I.Q. and reading scores .76; I.Q. and arithmetic scores .65; I.Q. and work-study scores .72; I.Q. and science scores .69. Teachers' grades and I.Q. produced these coefficients: reading .64; mathematic .53; science .71. These correlations show a fairly homogeneous predicitive potential for diverse areas of academic achievement.⁷

Reading Tests

The Gates Advanced Primary Reading Test⁸ consists of three types: a word recognition test, a sentence reading test and a paragraph reading test. As only the first and third test were given, the description will not include the sentence reading test. The word recognition test has 48 exercises; each contains four printed words and a picture which illustrates the meaning of one of the words. The test measures the degree to which a pupil can identify representative words. All the words fall within the first 1,000 of the Gates Primary Word List. The paragraph reading test consists of 24 paragraphs, each accompanied by illustra-

⁷Welty D. Lefever, "Henman-Nelson Tests of Mental Ability." The Fifth Mental Measurements Yearbook, ed. O.K. Buros (New Jersey: The Gryphon Press, Highland Park, 1959) pp 341-3.

⁸Arthur I. Gates, Gates Primary Reading Tests (Chicago: Columbia University, Bureau of Publications, 1958).

tions which when marked by the pupil measures ability to execute accurately the directions in each exercise. The test measures the ability to read thought units with a reasonable degree of understanding.

Gray reports on reliability and validity of the Gates tests. He states that

no statistical data in the reliability of the tests are provided. The author rightly points out, however, that the reliability of the results of tests is determined primarily by the skill of the examiner. The factors of greatest importance in this connection are the explanation of the tasks of the pupils and the management of the group during the test period.

no discussion of validity accompanies the tests. A critical analysis of the test passages led the reviewer to the conclusion that the test exercises were reasonably valid measures of the abilities they purport to measure.⁹

Spache agrees that

despite minor criticism of standardization, the tests will serve, if interpreted cautiously, in screening and diagnostic testing to indicate pupils who are markedly deficient in the skills of sight word vocabulary and paragraph meaning.¹⁰

⁹William S. Gray, "Gates Primary Reading Tests." The Third Mental Measurements Yearbook, ed. O.K. Buros (New Jersey; Rutgers University Press, New Brunswick, 1949) pp 512-3.

¹⁰George Spache, "Gates Primary Reading Tests." The Third Mental Measurements Yearbook, ed. O.K. Buros (New Jersey: Rutgers University Press, New Brunswick, 1949) p 513.

The reading vocabulary of the California Reading Tests¹¹ consists of two sections: a test of word recognition and a test of the meaning of opposites. The 45 items in this section sample five different essential functional elements which test the pupil's ability to distinguish between identical and different initial, middle and final sounds; to recognize words that are completely unrelated in sound. The test also measures basic vocabulary through recognition of opposites. The reading comprehension test is divided into three sections: Following Directions, Reference Skills and Interpretation of Material. These tests not only measure the pupil's ability to follow simple directions but also determine the skill he possesses in using reference material. The 25 items related to the brief stories measure the pupil's ability to select central ideas, to read and to comprehend directly stated facts, to make inferences and deductions, and to identify the correct sequences of given events.

The reliability coefficient of total reading on the California Test at the grade III level is .93 and reading vocabulary has a coefficient of .88, while reading compre-

¹¹Ernest W. Tiegs and Willis W. Clark. California Reading Tests - Upper Primary (Los Angeles: California Test Bureau, 1957)

hension is .87, computed using the Kuder Richardson formula 21. The 1957 revision of the California tests shows a correlation of .47 and .54 between reading vocabulary and reading comprehension and mental maturity. Further indications of validity are shown by a correlation of .81 between reading vocabulary of the California test and the word meaning of the Stanford. A similar correlation of .84 between reading comprehension of the California test and the Stanford paragraph meaning test. These correlations indicate a high level of reliability.

The Nelson Silent Reading Test¹² is designed to serve as a measure of the reading ability of pupils in grades III to IX inclusive, and to serve as a diagnostic instrument for determining pupil difficulty. There are three forms of the test, each consisting of a vocabulary test and a paragraph test. The vocabulary test consists of one hundred words, from the Thorndike and Horn lists, in five multiple-choice type selections. The paragraph test consists of twenty-five paragraphs, testing for three types of comprehension: general significance, details and prediction of outcomes, the question being of the four multiple-choice

¹²M. J. Nelson, The Nelson Silent Reading Test (Boston: Houghton Mifflin Company, 1939).

form. The paragraph test measures the ability to note details and the ability to predict the probable outcome. The reliability coefficient of the Nelson Test at grade IV is .92, at grade V is .91 and at grade VI is .90, in a comparison between forms A and B. The validity of this test (form A) correlated with Form A of the Gates Silent Reading Test is .80.

In a review of the Nelson tests McCullough summarizes correlations with other tests have run around .8. Reliability coefficients in scores for different forms of the test have been around .9. Norms based on 41,000 cases from various parts of the country present median scores for various scores. It is a test of general vocabulary and major types of comprehension in the reading of story material. It is one of the best available.¹³

Other Tests

The tests of written language and of spelling were not standardized and therefore no coefficients of reliability and validity can be quoted. These tests were given to all the pupils selected for the study by one examiner in June 1962. It was hoped that the results might supply a means of evaluating areas of language arts other than reading. The survey of the number of books read is included

¹³Constance M. McCullough, "Nelson Silent Reading Test." The Third Mental Measurements Yearbook, ed. O.K. Buros (New Jersey: Rutgers University Press, New Brunswick, 1949) pp 521-22.

in this section.

Written Language Test

Each pupil was given a copy of a paragraph made available through the University of Alberta Reading Centre (see appendix C) and asked to tell what he would do if he were in the situation described in the paragraph. By writing his answers, the pupil revealed how well he read, recognized the problem, followed directions, made inferences and wrote in logical and sequential manner. In an attempt to get an accurate rating of an objective test such as this, three different teachers marked the replies, using a scale of rating totalling 50 points. The scale, devised by student clinicians at the University of Alberta Centre (see appendix D) rated ten areas of paragraph understandings that were revealed through written language. Ratings were made by means of values of two, three or five for each of the ten areas to be judged by each of the three teachers. The mean values were used as "pooled" ratings for the final ratings of the pupil. According to Rummel¹⁴ the pooled ratings could be converted into actual scale values.

¹⁴Francis J. Rummel. An Introduction to Research Procedure in Education (New York: Harper and Brothers, pp 232-33.

The Schonell Spelling Test

The Schonell Spelling Test (see appendix C) is a British test made up of one hundred words listed in order of increasing difficulty. This test is suitable for grades IV, V and VI, since there are enough easy words at the beginning of the test to ensure that all weak spellers are familiar with some words; likewise there are enough difficult words to challenge even the best speller. It has proven a useful tool to measure spelling achievement.

Number of Books Read

Pupils were asked to list the titles of the books that they had read during the spring term. They did not need to state authors. Some pupils had reading records to which they could refer for a complete list.

Treatment of Data

To test the hypotheses this study will use test scores taken from the cumulative records of the school system in an attempt to determine the effectiveness of a plan of grouping for instruction in reading of the Joplin-type plan, in a normal classroom situation. The group intelligence tests scores become the basis on which to divide the population sample into low, average and high levels. The reading test and the other measures supplied the data necessary to compare

the two groups.

Intelligence Tests

All pupils both in the experimental and the control groups, are classified into low, average and high, according to an intelligence rating obtained from tests previously mentioned. Although the intelligence ratings identify the pupils as low, average or high in this study, it does not follow that these same pupils would be classed as good, average or weak readers, or in any way identify a pupil's reading level. Pupils were classed according to mental ability in an effort to determine if grouping for reading is more effective with bright, average or less able individuals.

TABLE 5

INTELLIGENCE TESTS

Test	Test Given Yr. Gr.		Grade	Mean Score	Range		
					Low	Average	High
Otis Group	'59	II	IV	114	below 109	109 to 119	above 119
Otis quick-	'60	IV	V	103.5	below 103	95 to 112	above 112
Henman- Nelson	'61	VI	VI	111	below 103	103 to 119	above 119

The intelligence tests (Table 5) used in the three grades determine the high, average and low group in each grade. The mean for the grade was the mean established for the city for the year the test was administered. For example, 114 was the mean of the Otis Primary, 103.5 the mean for the Otis Alpha and 111 the mean for Henman Nelson for the year the test was administered.

Approximately one half of the total group scored intelligence ratings from 109 and 120 in grade IV, from 95 and 112 in grade V and from 102 and 119 in grade VI. As a result the average group was made up of pupils scoring within the range of ± 6 points of 114 for grade IV, ± 8.5 points of 103.5 for grade V or ± 8 points of 111 for grade VI. The low group was made up of all pupils scoring below 109 in grade IV, below 95 in grade V and below 102 in grade VI. The high level was made up of all pupils scoring above 119 in grade IV, above 112 in grade V and above 119 in grade VI.

The population samples of the experimental group and the control group were divided into low, average and high according to these criteria. This study makes no attempt to place the pupils of the experimental group into the particular category they represented in the existing plan of grouping for reading instruction which was based primarily on reading achievement.

Reading Scores and Other Measures

The scores from the reading tests were used to test the hypotheses that inter-class grouping of pupils for instruction in reading for pupils intra-class groups. Differences between the means of the reading scores of the experimental and control groups after one year, after two years and after three years of a Joplin-type plan of grouping were calculated using the t -test to determine the extent of improvement over the three years. Comparisons between the differences in the means of spelling, vocabulary and written language were also made, since the inter-relationship between reading and other areas of the language arts in high.

The t -test assumes that the distributions of the variables in the populations from which the samples were drawn are normal. It further assumes that these populations have equal variances. The t -test was used to analyse the data for this study since there is reason to believe that the population distributions do not depart too grossly from the normal form and the population variances do not differ markedly from equality. Where the data show fairly gross departures from normality the nonparametric Mann-Whitney U test has been applied. Although the nonparametric U test is less powerful than the parametric t -test, its

power efficiency is fairly high for small samples. For this reason the U test was used for sample size of less than twenty following the tables as set down by Siegel¹⁵ while tables according to Ferguson¹⁶ were used for the t -scores.

Due to the fact that the data for this study were obtained from the accumulation of scores from a working system several uncontrolled variables resulted. With these less sophisticated measures, levels of confidence of .10 and .20 are acknowledged as indicating a trend to significance but in order to be significant a level of at least .05 must be realized.

¹⁵Sidney Siegel, Nonparametric Statistics for the Behavored Sciences (New York: McGraw-Hill Book Co. Inc. 1956).

¹⁶George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Book Co. Inc. 1959).

CHAPTER IV

ANALYSIS OF DATA AND INTERPRETATION OF RESULTS

The analysis of data is based on intelligence quotients and the reading and language scores made by pupils grouped by the Joplin-type plan, and by an intra-class form of grouping in grades IV, V and VI. Comparisons were made between scores in reading, vocabulary, spelling, written language and number of books read. Significant differences between the experimental and control groups were calculated by the parametric χ -test with the assumption that the distribution of the variables in the population from which the samples were drawn does not depart appreciably from normality. If the number of samples was less than twenty or if the variances of the sample populations departed markedly from equality then the non-parametric rank test known as the Mann-Whitney U test was applied.

Intelligence

The experimental and control groups of the three grades were divided into low, average and high levels according to intelligence scores. Details of this division into levels are given in Table 5 of Chapter III - the resulting sample size and the percentage of the total for a grade which each

level constituted is given in Table 6.

Of the total of 52 pupils in the experimental group of grade IV, 57.7% made up the average level and 21.15% made up the low level and the high level. The control group was not as equally divided with 56.1% of a total of 57 in the average level and 12.3% in the low level but 31.6% in the high level. The small sample size in the low level may affect the results since there is a dominance of high intelligence scores in the control distribution.

In grade V 57.1% of the total of 98 pupils in the experimental group were in the average level, 14.4% were in the low level and 28.5% were in the high level. The control group had 65.8% of a total of 47 pupils in the average level and 17.1% in the low and the high levels. Even though the distribution into levels was fairly even the grade V control group had very small samples at the low and high levels.

The experimental group in grade VI had 47.1% of 53 pupils in the average level and 22.7% in the low level with 30.2% in the high level. The control group has 51.6% of a total of 62 in the average level and 29.1% in the low and 19.3% in the high. The distribution of the pupils in the levels in the grade VI group was fairly equally divided and should not interfere with the randomness of the sample.

TABLE 6

TOTAL SAMPLE SIZE OF EXPERIMENTAL AND CONTROL GROUPS
FOR GRADE IV, V AND VI SHOWING PERCENTAGE OF
TOTAL FOR LOW, AVERAGE AND HIGH LEVELS

	Total N	N	Low %	N	Average %	N	High %
Grade IV							
Experimental	52	11	21.15	30	57.70	11	21.15
Control	57	7	12.30	32	56.10	18	31.70
Grade V							
Experimental	98	14	14.40	56	57.10	28	28.50
Control	47	8	17.10	31	65.80	8	17.10
Grade VI							
Experimental	53	12	22.70	25	47.10	16	30.20
Control	62	18	29.10	32	57.60	12	19.30

Table 7 shows the standard deviations, the mean scores, the differences of the means and the t -scores of intelligence for the total, the low, the average, and the high levels of grades IV, V and VI. Where sample size was less than twenty the U scores are given.

Of the total grade IV sample the mean intelligence score of the control group is higher by 1.42 points than that of the experimental group but in the totals of the grade V sample and the grade VI sample the differences favor the experimental group. None of these differences is significant.

It must be noted that the mean score of the grade IV was higher than that of either the grade V or the grade VI. This resulted when the scores of different intelligence tests were used. It does not signify brighter pupils in grade IV than in grade V or VI but that the test used in grade IV resulted in higher scores. The mean score on the Otis primary test for the system was 117, while the mean score on the Otis Alpha was 105. The fact that the grade IV mean scores in intelligence are higher than the mean scores of either grade V or VI is a characteristic of the intelligence test and may not affect reading scores. The average reading grade for the total population of grade

TABLE 7

TOTAL AND LOW, AVERAGE AND HIGH MEAN SCORES OF INTELLIGENCE FOR GRADES IV, V AND VI OF THE EXPERIMENTAL AND CONTROL GROUPS

	Sample Size		Mean Scores		Variance		Mean Diff.	\bar{x}	P	\bar{x}	P
	Exp.	Con.	Exp.	Con.	Exp.	Con.					
Grade IV											
Total	50	57	113.86	115.28	7.15	7.10	-1.42	.90	NS	--	--
Low	11	7	103.09	100.40	5.35	6.12	+2.69	--	--	28.5	NS
Average	30	32	114.47	114.72	2.89	2.52	-.25	.36	NS	--	--
High	11	18	122.36	122.11	1.90	3.71	+.25	--	--	69.5	NS
Grade V											
Total	98	47	105.63	103.62	10.20	9.60	+2.01	1.1	NS	--	--
Low	14	8	90.14	87.77	4.80	3.10	+2.37	--	--	33.5	NS
Average	56	31	103.25	104.19	4.38	4.42	-.94	.72	NS	--	--
High	28	8	118.00	117.60	5.40	3.70	+.48	.28	NS	--	--
Grade VI											
Total	53	62	112.06	109.40	11.30	12.46	+2.66	1.05	NS	--	--
Low	12	18	95.90	94.72	6.24	6.78	+1.18	--	--	115.5	NS
Average	25	32	111.88	111.00	4.70	5.23	+.88	.60	NS	--	--
High	16	12	124.40	127.16	3.65	5.09	-2.76	--	--	67.5	NS

IV, from which the sample for this study was taken was 5.6 while the average reading grade for the population over a period of five years was 5.52. The grade IV population does not tend to do better in reading than any of the other grade IV pupils of the system.

In grade IV at the low level the difference between the means is for the experimental group by 2.69 points, while the average and high levels have almost identical scores. There is no significant difference between any of the levels in grade IV.

The mean scores of the average level of grade V show a difference of .94 between the experimental and control groups. The low and high levels of grade V have even less difference. There is no significant difference between the two groups. The number of samples in the control group for both the low and the high levels is fewer than those in the experimental group. This tends to weaken the sample population and makes comparison somewhat hazardous.

There is no significant difference between any of the mean scores at any of the levels in grade VI. The high level grade VI shows 2.76 points for the control group but the average and low levels, .88 and 1.18 respectively, favor the experimental group.

Applying the Mann-Whitney U test to the high level

mean score of grade VI gives a U score of 69.5 which exceeds the 61 required for significance at the .10 level and confirms the t -score rating of no significant difference.

Whereas no significant difference is found between the mean scores on the intelligence tests of the experimental and control groups, it may be assumed that the two independent groups are drawn from the same population. This, then, makes it possible to apply the t -test of significant differences between the mean scores of reading, language and number of books read since the experimental and control groups are set up according to intelligence for the purpose of comparison, and represent samples from the same population.

Reading

Analysis was made of data collected from the reading scores of a working system accumulated over a three year period for each of the three grades for both the experimental and the control groups. The reading scores are listed on the tables according to the year of the grouping program rather than according to the name of the test in order to facilitate the setting up of the tables.

Reading scores for more than one year were selected in order to determine if more significance can be found between

the two groups in any of the grades after one, two or three years of grouping by the Joplin-type plan.

Four tables are used to show differences between the experimental and the control groups with respect to reading. These tables show the standard deviations, mean scores, mean differences, t -scores, and significance levels as well as the U scores and significance levels for the experimental and control groups, after one, two and three years of grouping for reading in grades IV, V and VI.

Reading scores were taken from three different forms of the Nelson test except the scores for first year grade V and second year grade IV which were from the California tests and first year grade IV which were from the Gates Advanced-Primary test. (see Table 4, Chapter III)

Grade IV Reading

Table 8 gives comparisons between the experimental and control groups showing significance of the mean scores of reading for grade IV after one, two and three years of Joplin-type grouping for the experimental group and a form of intra-class grouping for the control group.

There is no significant difference between the experimental and the control groups for the total grade IV in any of the three years. Less than one point of difference separates the two groups during the period. Although the difference in the mean IQ for grade IV was 1.42 points

TABLE 8

SIGNIFICANT DIFFERENCES OF THE EXPERIMENTAL AND CONTROL GROUPS BETWEEN MEANS OF READING SCORES - GRADE IV

	Sample Size		Mean Scores		Variance		Mean Diff.	<i>t</i>	P	<i>t</i>	P
	Exp. Con.		Exp.	Con.	Exp.	Con.					
After One Year of Grouping											
Total	51	57	56.70	56.07	8.92	11.02	+ .63	.35	NS	--	--
Low	10	7	53.80	52.90	10.02	8.56	+ .90	--	--	33.5	NS
Average	30	32	57.96	55.21	8.49	12.02	+2.75	1.11	NS	--	--
High	11	18	55.90	58.83	5.19	4.93	-2.87	--	--	78	NS
After Two Years of Grouping											
Total	52	57	85.61	86.40	6.25	8.34	- .79	.50	NS	--	--
Low	11	7	83.18	83.10	6.59	7.73	+ .08	--	--	37.5	NS
Average	30	32	86.03	85.31	6.26	9.53	+ .72	.48	NS	--	--
High	11	18	86.90	89.61	5.19	4.93	-2.72	--	--	75	NS
After Three Years of Grouping											
Total	52	57	68.79	68.75	15.90	15.93	+ .14	.06	NS	--	--
Low	11	7	67.63	61.90	16.93	17.15	+5.73	--	--	32.5	NS
Average	30	32	67.53	67.43	15.11	16.80	+ .10	.02	NS	--	--
High	11	18	73.36	73.05	16.69	13.40	+ .31	--	--	94.5	NS

higher for the control group, the experimental group scored as well as the control group in reading, suggesting that the Joplin-type plan of grouping may account for the difference.

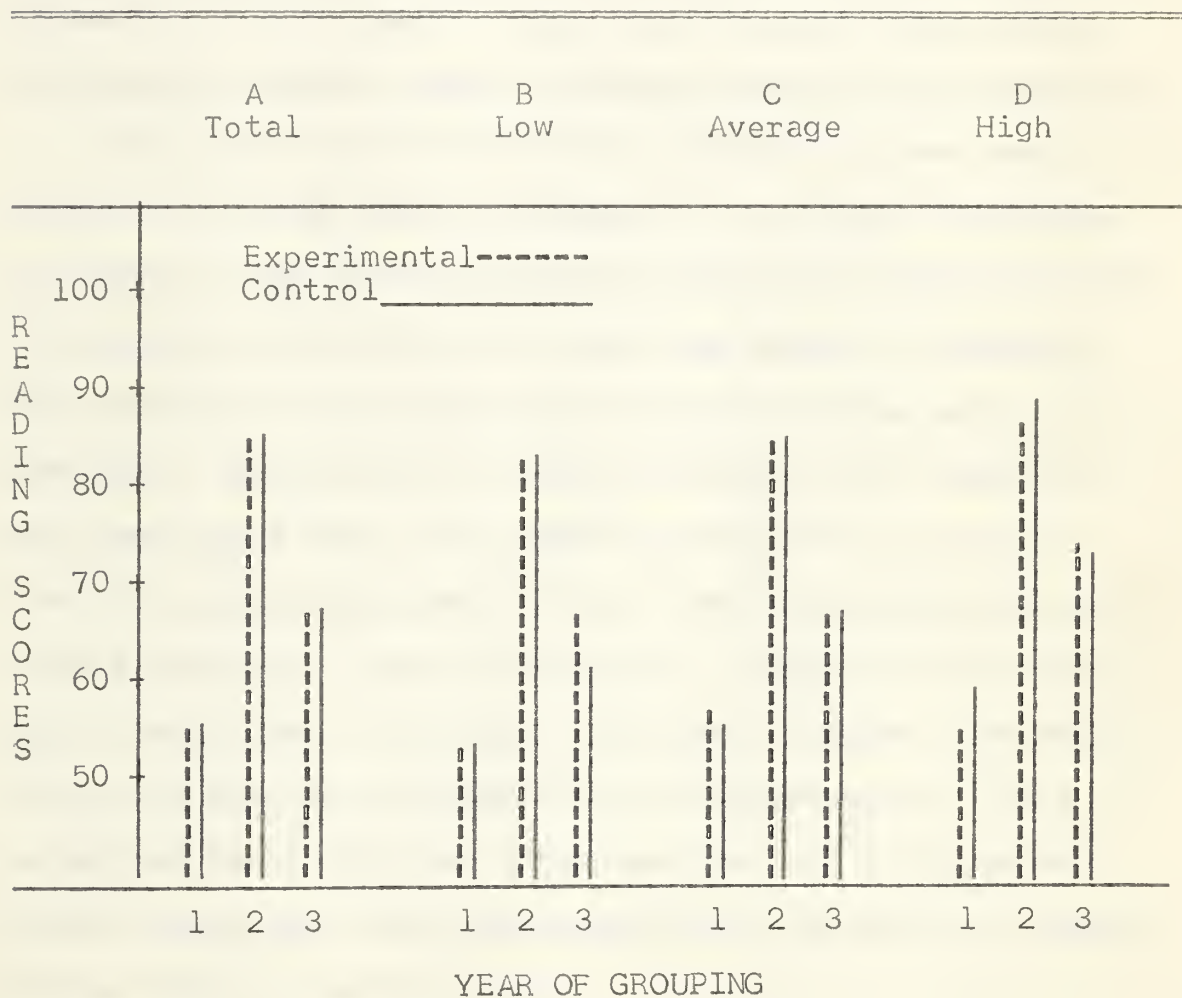
Figure 1 shows by graph the differences in the mean scores in reading between the experimental and control groups after one, two and three years of the Joplin-type plan of grouping for the experimental group in grade IV. Part A reveals very little difference between the means of the totals of the two groups.

There is less than one point of difference between means for grade IV experimental and control groups after one year or two years of grouping at the low level. After three years of grouping a difference of 5.73 favors the experimental group, but this favorable difference might be anticipated since the mean IQ score for the low grade IV is 2.69 points higher for the experimental group. None of the differences is significant. Part B of figure 1 shows that after one year and after two years of grouping for the low level of grade IV, very little difference existed between the means of the experimental and control groups. After three years of grouping the experimental group achieved more than the control group.

The average level of grade IV approaches significance after one year of grouping in favor of the experimental

FIGURE 1

GRAPHS SHOWING MEAN DIFFERENCES OF EXPERIMENTAL AND CONTROL GROUPS AFTER ONE, TWO AND THREE YEARS OF GROUPING AT THE TOTAL, LOW, AVERAGE AND HIGH LEVELS OF GRADE IV READING SCORES



group. This favorable return for the experimental group does not hold, as less than one point of difference exists between the two groups after two and three years of grouping. Very little difference is found between these two groups in mean IQ scores indicating no advantage in grouping for reading with average grade IV pupils. Part C of figure 1 shows the average levels after one, two and three years of grouping and the almost identical means of the two groups.

No significant differences between the means were found at the high level of grade IV. The mean difference in favor of the control group of 2.87 points after one year of grouping and 2.72 points after two years of grouping was reduced to less than one point after three years of grouping. This reduced difference between the means of the two groups may be the result of the three years of grouping since the means of the IQ and the sample size were nearly identical. Part D of figure 1 shows the high level and reveals that the control group had a higher mean score after one year of grouping than the experimental. This advantage was maintained after two years of grouping but after three years the experimental had a mean score slightly higher than the control group.

Grade V Reading

Mean differences of reading scores in grade V after one, two and three years of grouping for reading are shown in Table 9.

In the total for grade V, the results after one year of grouping approach significance for the experimental group. There are three points of difference between the means of the reading scores after two years of grouping favoring the experimental group but this difference is not significant. The difference of the means in IQ for grade V favored the experimental group. This advantage was maintained in reading after one and two years of grouping but not after three years. The improvement in the control group indicated by the total mean scores equal to those of the experimental group could be a result of the grouping.

Figure 2 depicts graphically the differences in the mean scores of reading between the experimental and control groups of grade V after one, two and three years of grouping for the experimental group. Part A shows very little difference between the means of the totals of the two groups. The difference between the experimental and control groups after one year increased for the experimental group after two years of grouping but the control group improved during the third year until its mean score was higher than the

TABLE 9

SIGNIFICANT DIFFERENCES OF THE EXPERIMENTAL AND CONTROL GROUPS BETWEEN MEANS OF READING SCORES - GRADE V

Sample Size		Mean Scores		Variance		Mean Diff.	t	P	t	P
Exp. Con.		Exp.	Con.	Exp.	Con.					
After One Year of Grouping										
Total	96	47	85.78	83.91	5.31	7.35	+1.87	1.54	.20	--
Low	14	8	81.20	78.62	4.74	7.59	+2.58	--	--	44
Average	54	31	85.90	84.00	4.95	6.13	+1.90	1.66	.10	--
High	28	8	87.90	88.80	5.08	8.14	+ .90	.37	NS	--
After Two Years of Grouping										
Total	98	47	72.24	69.21	17.31	13.64	+3.03	.93	NS	--
Low	14	8	62.00	60.12	12.78	27.04	+1.88	--	--	41
Average	56	31	69.60	70.42	15.19	16.09	-.82	.03	NS	--
High	28	8	81.80	73.60	17.63	22.83	+8.20	1.05	NS	--
After Three Years of Grouping										
Total	98	46	85.30	85.88	15.35	18.60	-.58	.15	NS	--
Low	14	8	79.85	70.35	10.14	19.50	+9.50	--	--	16.5
Average	56	30	83.43	87.13	14.06	16.11	-3.70	.97	NS	--
High	28	8	91.80	89.28	16.89	22.61	+2.60	.30	NS	--

experimental group.

Near significant differences are shown between the experimental and the control groups at the low level except after three years of grouping. There is significant difference after three years of grouping at the .05 level as computed by the Mann-Whitney U test. There is very little difference between the IQ mean scores in the low level grade V. Figure 2 part B shows the grade V low levels. The mean differences in reading scores for the experimental group are 2.58 points higher after one year of grouping; 1.88 points higher after two years and 9.5 points higher after three years of grouping than the control group. It is suggested that the Joplin-type plan of grouping may account for the difference in reading favoring the experimental group resulting in the low level grade V pupils doing better than the control group in reading.

After one year of grouping the average level of grade V shows significant differences between the means at the .10 level of confidence with 1.9 for the experimental group. After two years of grouping only .82 points of difference is shown between the experimental and control groups but after three years of grouping 3.7 points of difference are shown. The latter two differences, although not significant, favor the control group.

FIGURE 2

GRAPHS SHOWING MEAN DIFFERENCES OF EXPERIMENTAL AND CONTROL GROUPS AFTER ONE, TWO AND THREE YEARS OF GROUPING AT THE TOTAL, LOW, AVERAGE AND HIGH LEVELS OF GRADE V READING SCORES

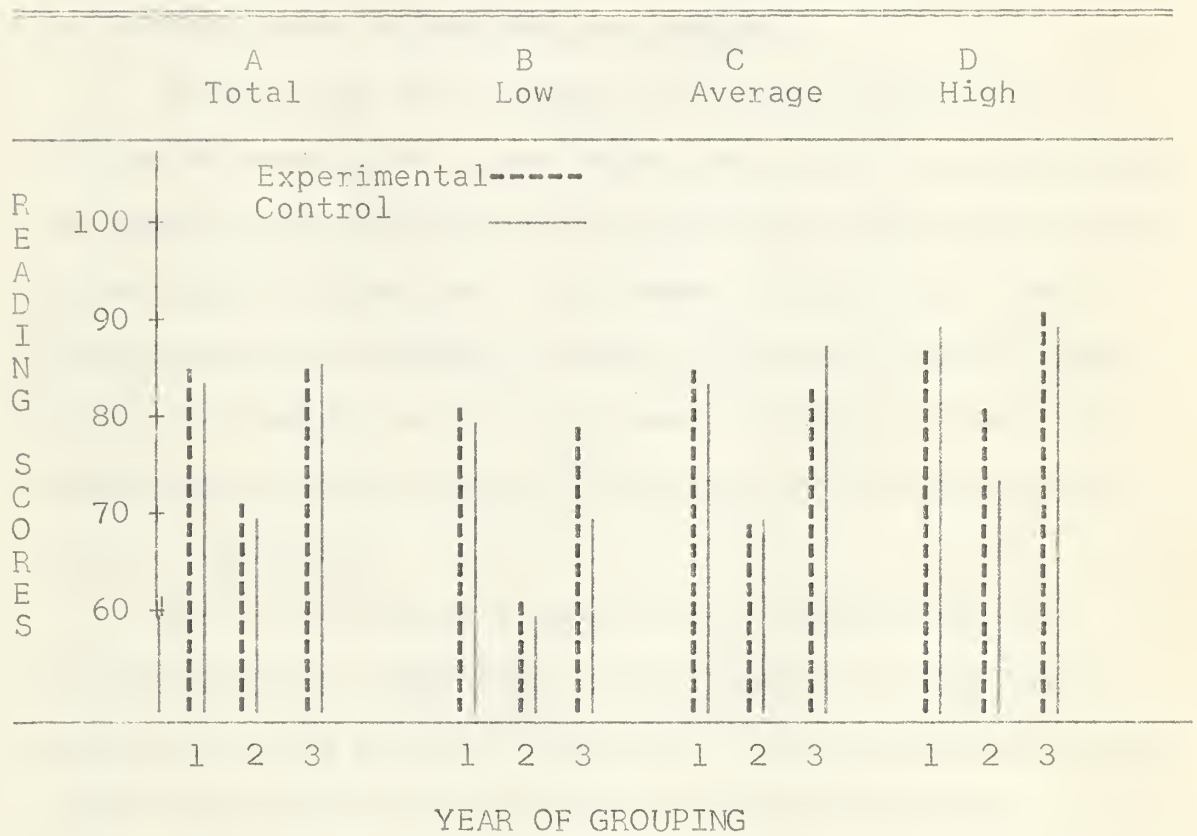


Figure 2, part C shows the mean score of the experimental group to be slightly higher than that of the control group but after two years very little difference exists between the two groups. After three years of grouping the control group has a higher mean score than the experimental.

Average grade V pupils do not benefit by being grouped for instruction in reading by the Joplin-type plan but seem to achieve more in intra-class groups.

At the high level grade V the mean difference of 8.2 approaches significance after two years of grouping but no significant difference is shown after one year or after three years of grouping. The means of the IQ for the experimental and control groups of the high grade V were within .48 points so there is some indication that the experimental group may have benefited by the Joplin-type plan of grouping.

Part D of figure 2 shows the difference between the means of the high level to be higher for the control group after one year but higher for the experimental group after two years and after three years of grouping. It would seem that in grade V the low and high levels of the experimental group do benefit from Joplin-type grouping especially after three years of such grouping for reading.

TABLE 10

SIGNIFICANT DIFFERENCES OF THE EXPERIMENTAL AND CONTROL GROUPS BETWEEN MEANS OF READING SCORES - GRADE VI

	Sample Size		Mean Scores		Variance		Mean Diff.	<i>t</i>	P	<i>Σ</i>	P
	Exp.	Con.	Exp.	Con.	Exp.	Con.					
After One Year of Grouping											
Total	52	62	71.65	64.27	13.70	13.02	+7.38	3.08	.01	--	--
Low	11	18	60.30	54.33	11.07	10.09	+5.97	--	--	76.5	NS
Average	25	32	68.80	64.97	11.07	10.84	+3.83	1.38	.20	--	--
High	16	12	83.56	76.50	10.20	11.54	+7.06	--	--	62.0	NS
After Two Years of Grouping											
Total	53	62	89.13	84.69	19.28	21.15	+4.44	1.13	NS	--	--
Low	12	18	76.08	69.00	13.68	17.46	+7.08	--	--	95	NS
Average	25	32	82.00	85.87	12.51	16.76	-3.87	1.00	NS	--	--
High	16	12	110.00	105.49	12.71	15.66	+4.51	--	--	74	NS
After Three Years of Grouping											
Total	53	62	103.52	95.36	17.16	18.23	+8.16	2.45	.02	--	--
Low	12	18	88.75	82.33	13.90	14.83	+6.42	--	--	86	NS
Average	25	32	99.80	95.95	12.15	15.18	+3.85	1.07	NS	--	--
High	16	12	120.40	113.33	11.05	11.41	+7.07	--	--	63.5	NS

Grade VI Reading

Table 10 shows significant differences between means in reading scores in grade VI. The experimental group and the control group are significantly different at the .01 level of confidence after one year of grouping and at the .02 level of confidence after three years of grouping. A mean difference for the experimental group of 4.44 after two years of grouping approaches significance.

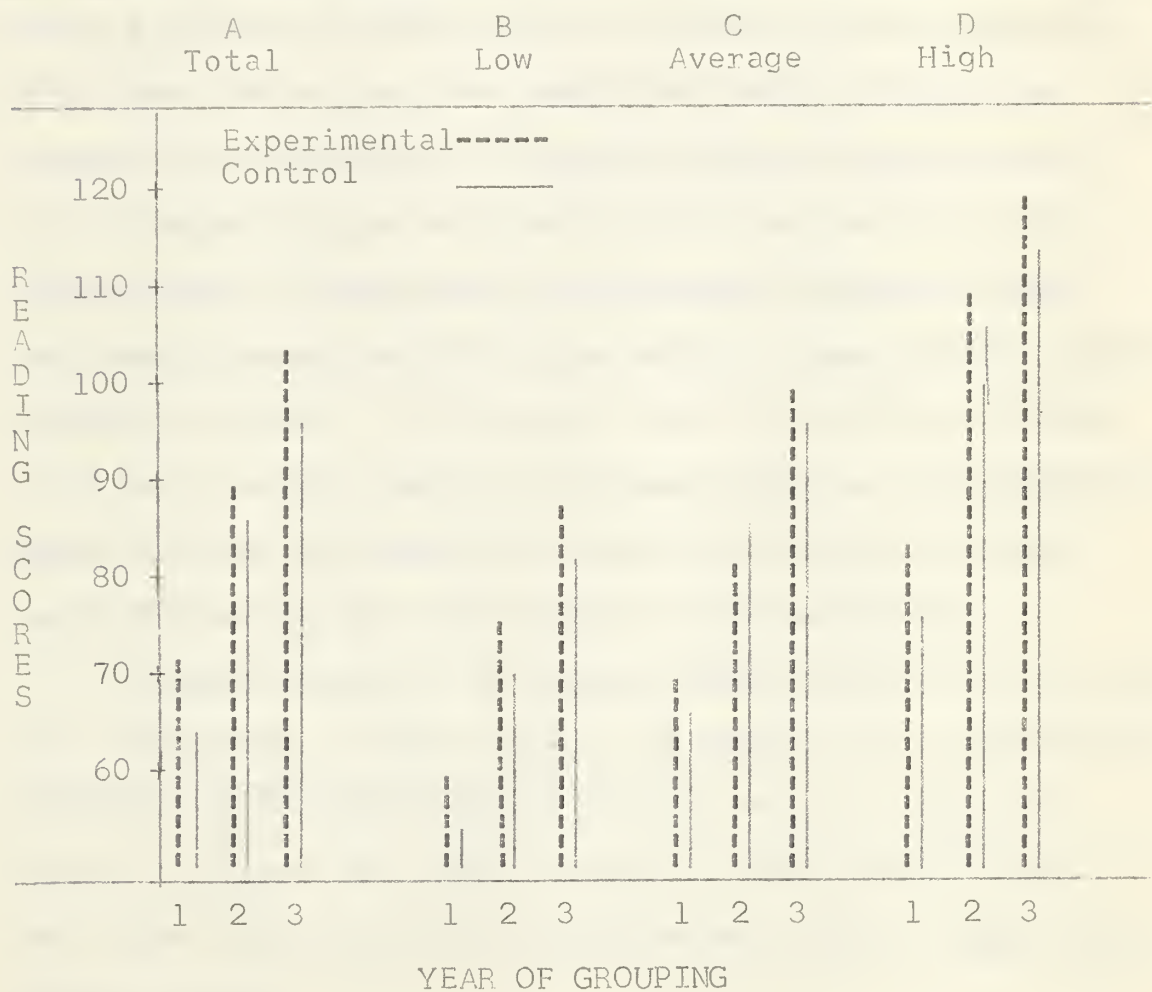
Figure 3 shows the differences between the mean scores in reading for grade VI after one, two and three years of grouping for reading by the Joplin-type plan in the experimental group. Part A reveals a difference for the experimental group over the control group out of the total of grade VI after one year of grouping. After two and three years of grouping the difference is for the experimental group. Grade VI pupils tend to benefit when reading instruction is given in classes grouped by Joplin-type plan.

Although there is no significant difference between the two groups at the low level of grade VI, the difference in favor of the experimental group approaches significance at the .20 level after one, two and three years of grouping.

Figure 3, part B shows the low level grade VI which, with differences of 5.97 points after one year, 7.08 points

FIGURE 3

GRAPHS SHOWING MEAN DIFFERENCES OF EXPERIMENTAL AND CONTROL GROUPS AFTER ONE, TWO AND THREE YEARS OF GROUPING AT THE TOTAL, THE LOW, AVERAGE AND HIGH LEVELS OF GRADE VI READING SCORES



after two years and 6.42 points after three years of grouping, is higher for the experimental than the control group. Low grade VI pupils tend to benefit by Joplin-type grouping for reading.

The average level for grade VI shows less than one point difference in the means of the IQ scores between the experimental and the control groups but shows more than 3 points difference in the reading scores between the two groups after one, two and three years of grouping. Although the differences in reading approach significance, it is interesting to note that after one year and after three years of grouping the differences favored the experimental group but after two years of grouping the control group was higher. A different form of the Nelson Reading test was used for each of the three years so the difference should not be attributed to a variety of tests but must be accounted for by other uncontrolled variables.

Figure 3, part C of average level grade VI illustrates the difference. After one year of grouping the experimental group is 3.03 points higher than the control group but after two years the control group is 3.87 points higher and after three years the experimental group is again 3.15 points higher.

The grade VI reading scores approach significance after

one, two and three years of grouping in favor of the experimental group at the high level. The mean IQ scores of the high level grade VI had the advantage of 2.7 points in favor of the control group, but the means in reading scores approach significance in favor of the experimental group. The apparent strength in grade VI reading at the high level could be attributed to the Joplin-type plan of grouping for reading.

Part D of figure 3 shows the high level with the experimental group 8.06 points higher after one year of grouping; 4.51 points higher after two years and 7.01 points higher after three years. The differences after one year and three years approach significance at the .20 level.

It can be concluded that grade VI benefits by Joplin-type grouping for reading. The low and high levels seem to benefit more than the average group but all levels benefit after three years of grouping.

Comparative Development in Reading

Table 11 shows the differences in the means of reading scores between the grade IV total mean score and the grade VI total mean score for each level for both the experimental and the control groups. The purpose of this type of comparison is to determine if there is a greater increase in

TABLE 11

READING DEVELOPMENT FROM GRADE IV TO GRADE VI FOR THE
TOTAL, THE LOW, THE AVERAGE AND THE HIGH LEVELS
AFTER ONE, TWO AND THREE YEARS OF GROUPING

	After one year		After two years		After three years	
	Experi- mental	Control	Experi- mental	Control	Experi- mental	Control
Total	14.95	8.27	3.52	-1.72*	34.73	26.71
Low	6.50	1.43	-7.10*	-14.10*	21.12	20.63
Average	10.84	9.76	-4.03*	.56	32.27	28.52
High	27.66	17.67	23.10	15.88	47.04	40.28

*shown as a minus since decrease in scores resulted
through use of different tests.

in reading achievement from grade IV to grade VI under the Joplin-type plan of grouping for instruction in reading than under intra-class grouping.

The development from grade IV to grade VI after one year of grouping in the experimental group is 14.95 points and 8.27 points for the control group. Since the mean scores of grade IV experimental and control groups were almost the same, the 14.95 points indicate a considerably greater increase in experimental group development than the 8.27 points indicate for the control group.

After two years of grouping the mean scores of the grade IV experimental and control groups differed by only .8 but the development in reading from grade IV to grade VI in the experimental groups was 3.52 points, while the control group actually lost 1.72 points on decreased mean differences. The decreased mean differences resulted from a change of test. The California reading test used in grade IV produces mean scores higher than the Nelson test in grade VI. However, both the experimental and control groups were tested under similar circumstances, so development has been compared.

After three years of grouping for reading when the mean scores of the experimental and control groups were identical in grade IV, the development in reading for the experimental groups from grades IV to VI was 34.73 and for

the control group 26.71 points.

Measured in terms of reading development from grade IV to VI it appears that definite advantage exists when pupils are grouped by the Joplin-type plan. At the low level the reading growth from grade IV to VI after one year of grouping is five points greater for the experimental group than the control group, when no difference existed between the means of the reading scores of the two groups in grade IV. After two years of grouping, having started with identical means in grade IV, the reading growth is seven points greater for the experimental group than the control group.

After three years of grouping both the experimental and control groups at the low level increased by 21.12 and 20.63 respectively from grade IV to VI. The grade IV mean score was 5.7 points higher than the mean score of the control group and this difference was maintained through to grade VI. In terms of development in reading it appears that the low levels benefit by Joplin-type plan of grouping.

At the average level the experimental and control groups have similar gains in mean scores of reading from grade IV to grade VI after one year of grouping. After two years of grouping the drop in mean scores for the control group is not as much as that of the experimental

group, indicating that the control group made better reading gains. After two years the difference in mean scores is greater for the experimental group than the control group.

Except after two years of grouping there does not seem to be an advantage in Joplin-type plan of grouping as far as reading development is concerned for the average level. The greater development in reading indicated for the average level results after three years of grouping. Pupils tend to do better under inter-class grouping for reading over a period of time of more than one year.

Summary of Reading

Instruction in reading given under Joplin-type grouping does not appear to provide advantages to grade IV pupils as a single group after one, two or three years of grouping. There is, however, some indication that after three years of grouping the low and the high levels of grade IV do benefit when reading instruction is given under a Joplin-type grouping plan.

Grade V pupils grouped for reading instruction by a Joplin-type plan tend to achieve higher reading scores after one and two years but show little difference after three years. Low level pupils after one year of grouping and high level pupils after two and three years of grouping tend to do better in reading when instruction is given in Joplin-type

groups. After three years of grouping the low level pupils do significantly better under the Joplin-type plan.

Grade VI pupils grouped for instruction in reading by a Joplin-type plan do significantly better after one year, and three years of grouping. Although no significant difference was found at any of the levels of grade VI, the low and the high levels after one, two and three years tend to do better under Joplin-type grouping. The average level, after one and three years of grouping tends to do better also.

Measured in terms of development of reading from grade IV to grade VI by comparing reading scores indications are that those pupils receiving instruction in reading by the Joplin-type plan do better in reading than those pupils grouped by a form of intra-class grouping.

Language

The next three tables show comparisons between the experimental and control groups in spelling, vocabulary and written language for each grade at each level. Table 12 gives the number of samples, standard deviation, mean scores and mean differences in spelling of the total for grades IV, V and VI as well as for the low, average and high levels for each grade. *t*-scores for groups with more than twenty samples are given and for groups with samples less than twenty U scores are given. Similar information is given in Tables 13

TABLE 12

SIGNIFICANT DIFFERENCES OF THE EXPERIMENTAL AND
CONTROL GROUPS BETWEEN MEANS OF SPELLING
SCORES FOR GRADES IV, V AND VI

	Sample Size		Mean Scores		Variance		Mean Diff.	\bar{x}	p	\bar{x}	p
	Exp. Con.	Con.	Exp.	Con.	Exp.	Con.					
Grade IV											
Total	52	56	54.03	54.03	8.79	10.90	.00	.02	NS	--	--
Low	11	7	56.00	50.00	9.11	9.84	+6.00	--	--	24.5	NS
Average	30	31	54.00	51.51	9.50	12.31	+2.49	.86	NS	--	--
High	11	18	52.00	59.94	8.39	10.19	-7.94	--	--	59	.20
Grade V											
Total	95	45	64.61	60.64	11.35	13.54	+3.97	1.81	.10	--	--
Low	14	8	59.57	57.00	9.70	14.30	+2.57	--	--	50.5	NS
Average	53	29	64.40	61.80	11.13	12.53	+2.60	.95	NS	--	--
High	28	8	68.00	60.00	11.22	15.71	+8.00	--	--	79	NS
Grade VI											
Total	51	61	72.04	68.68	11.09	10.44	+3.36	1.43	.20	--	--
Low	12	17	63.58	61.70	10.86	10.67	+1.88	--	--	119.5	NS
Average	24	32	69.87	69.31	8.30	9.19	+ .56	.24	NS	--	--
High	15	12	82.27	76.91	6.48	9.06	+5.36	--	--	57	.20

and 14 for vocabulary and written language. Figures 4 to 7 give graphic illustrations of differences in mean scores for each level of each grade in the language area.

Spelling

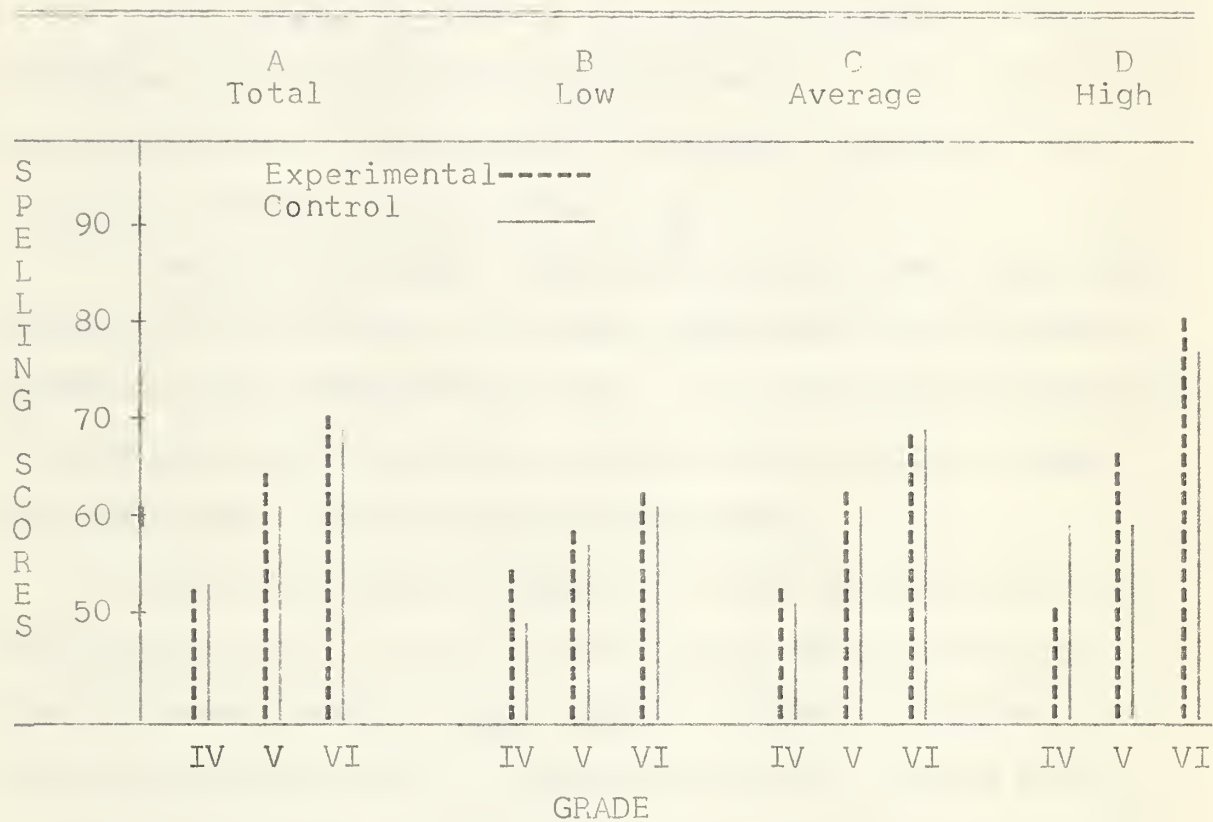
Table 12 shows there is no mean difference in grade IV in spelling but in grade V the difference is 3.97 for the experimental group which is significant at the .10 level. The grade VI difference is 3.36, which is significant at the .20 level. These differences can not be considered highly significant but show a marked difference between the two groups with the experimental group stronger, indicating that the Joplin-type plan of grouping for reading might be responsible for the better spelling scores of the experimental group.

Part A of figure 4 illustrates by graph the differences of the mean between the experimental and control groups. The experimental group of grade IV shows no difference but grades V and VI show considerably higher means in spelling scores than the control group.

The low level of grade IV shows a mean difference of 6.0 points for the experimental group and a difference of 2.49 points in spelling for the experimental group at the average level. These differences are not significant. The high level of grade IV has 7.94 points in favor of the

FIGURE 4

GRAPHS SHOWING MEANS OF EXPERIMENTAL AND CONTROL GROUPS OF THE TOTAL, THE LOW, AVERAGE AND HIGH LEVELS OF GRADES IV, V AND VI SPELLING SCORES



control group. This difference approaches significance at at .20 level.

Grade IV pupils do not do better in spelling as a result of receiving instruction in reading in Joplin-type grouping. The high level grade IV produced better results from pupils who had not been grouped.

All levels of grade V had mean differences in spelling favoring the experimental group but none of these differences is significant. The low level difference was 2.57, the average 2.60 and the high level .80.

Grade VI spelling results at the low level have 1.88 points difference and .56 points difference at the average level for the experimental group. The 5.36 points difference at the high level approaches significance at the .20 level of confidence for the experimental group.

Part B of figure 4 shows the mean scores of spelling at the low level. Grade IV mean scores show a difference for the experimental group. Grade V shows a difference for the experimental group, indicating that the control group in grade V did almost as well as the experimental group in spelling. There was even less difference between the two groups in grade VI. At the low level it appears that the Joplin-type plan of grouping for reading was beneficial to grade IV but by grade VI the differences between the means had diminished, indicating that the plan may be less

effective as the pupils progress to the higher grades.

Part C of figure 4 shows difference in the means at the average level. The mean difference for the experimental group in grade IV is continued in grade V, but the difference between the two groups in grade VI is less than one. It might be stated that Joplin-type plan of grouping for reading shows only slight advantage in spelling at the average level, which almost disappears by grade VI.

Part D shows mean differences in spelling at the high level. The mean difference for the control group in grade IV is reversed to favor the experimental group in grade V. By grade VI the mean difference approaches significance for the experimental group.

It appears that, at the high level, spelling skill improves for pupils grouped by Joplin-type plan for reading as they reach grades V and VI.

Vocabulary

Table 13 shows significance between the means of vocabulary scores for grades IV, V and VI at the total and the low, average and high levels. At the total of grade IV the mean difference of 2.42 is for the control group. This difference is highly significant. In grade V the mean difference of .04 shows no significance between the two groups. The total grade VI mean difference of 4.97 for the experimental group is significant at the .01 level.

TABLE 13

SIGNIFICANT DIFFERENCES OF THE EXPERIMENTAL AND
CONTROL GROUPS BETWEEN MEANS OF VOCABULARY
SCORES FOR GRADES IV, V AND VI

	Sample Size		Mean Scores		Variance		Mean Diff.	χ	P	χ	P
	Exp.	Con.	Exp.	Con.	Exp.	Con.					
Grade IV											
Total	52	57	40.07	42.49	3.00	2.60	-2.42	4.63	.001	--	--
Low	11	7	36.09	41.55	5.75	3.02	-5.46	--	--	32	NS
Average	30	32	41.06	42.40	2.78	2.83	-1.34	1.94	.10	--	--
High	11	18	41.36	43.00	2.45	1.56	-1.64	--	--	69.5	.20
Grade V											
Total	98	47	43.19	43.15	7.15	9.78	+ .04	.027	NS	--	--
Low	14	8	40.85	35.20	5.50	11.57	+5.65	--	--	34.5	.20
Average	56	31	42.33	44.45	6.50	7.30	-2.12	1.34	.20	--	--
High	28	8	46.07	46.00	7.80	9.89	+ .07	.02	NS	--	--
Grade VI											
Total	52	62	53.67	48.70	8.64	8.19	+4.97	3.12	.01	--	--
Low	12	18	45.58	42.38	6.78	7.06	+3.20	--	--	90.5	NS
Average	25	32	52.08	48.90	5.99	7.68	+3.18	1.59	.20	--	--
High	15	12	62.80	57.60	5.33	5.67	+5.20	--	--	43	.05

As indicated in Part A of figure 5 grade IV pupils do better in vocabulary when not grouped by Joplin-type plan; grade V pupils of the control and experimental groups do equally well but grade VI pupils do better in vocabulary when grouped.

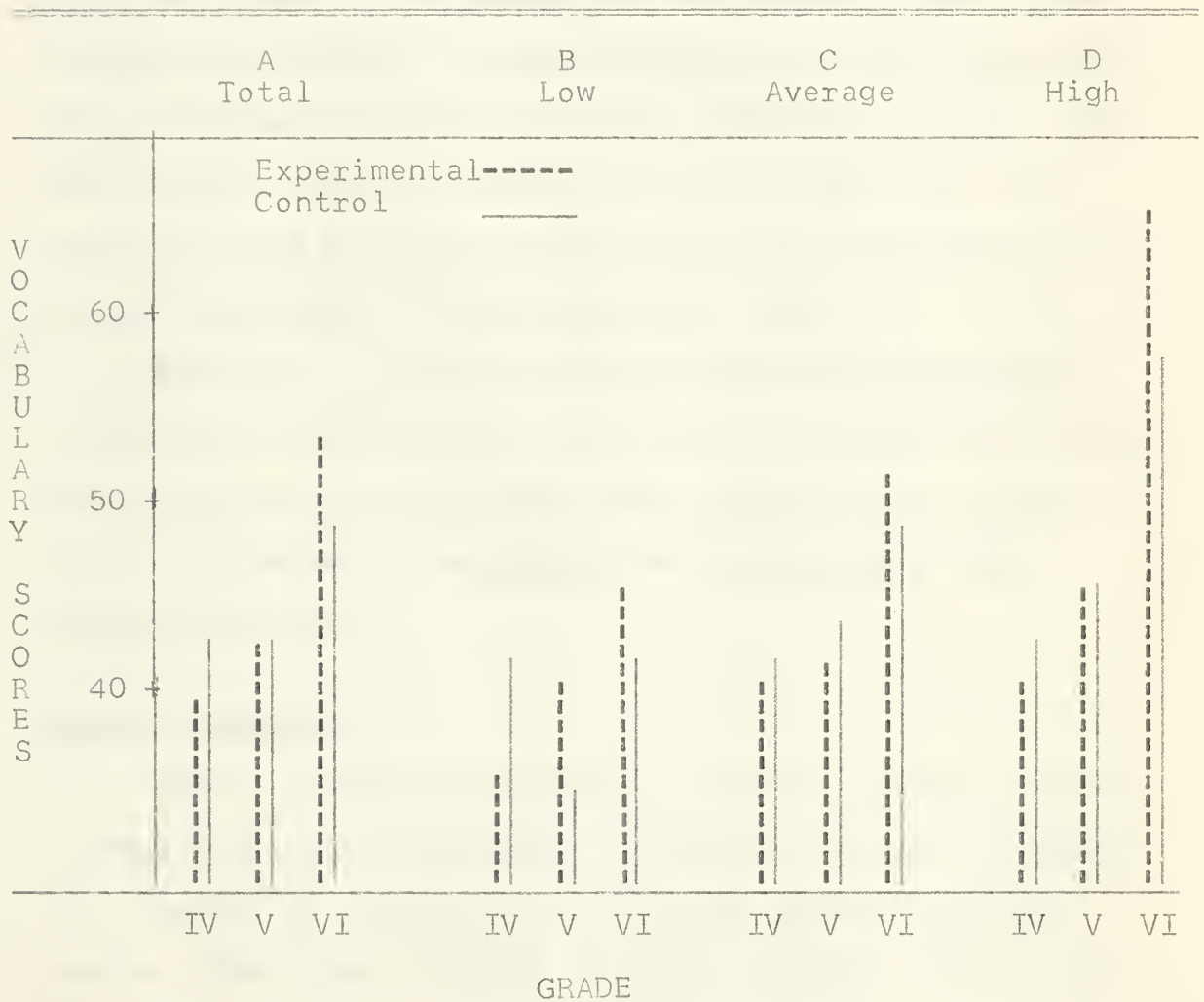
In grade IV at the low level the mean difference in vocabulary of 5.46 is for the control group. At the average level the mean difference of 1.34 for the control group is significant at the .10 level. At the high level too, the mean difference of 1.64 is for the control group. Although none of these differences is highly significant, the grade IV pupils at each of the low, average and high levels tend to do better in vocabulary when not grouped for reading by Joplin-type grouping.

A mean difference in vocabulary of 5.65 for the experimental group at the low level grade V is significant at the .20 level. Significance at the .20 level is also shown for the average level of grade V but this mean difference is for the control group. No difference is shown between the two groups at the high level.

All levels of grade VI show mean differences on vocabulary scores for the experimental group. The low level with 3.2 points difference is not significant but the average level with 3.18 points of difference is significant

FIGURE 5

GRAPHS SHOWING MEANS OF EXPERIMENTAL AND CONTROL GROUPS
OF THE TOTAL, THE LOW, AVERAGE AND HIGH LEVELS OF
GRADES IV, V AND VI VOCABULARY SCORES



at the .20 level. The 5.20 points difference at the high level is significant at the .05 level of confidence.

Figure 5 part B gives a graphic illustration of the differences between the means in vocabulary of the experimental and control groups at the low level. Grades V and VI show higher scores in vocabulary for the experimental group but grade IV is higher for the control group. Part C shows grade IV and V higher in vocabulary for the control group and grade VI higher for the experimental group. The experimental group of grade VI is also higher than the control at the high level while grade IV is higher for the control and grade V groups are about equal.

Pupils at all levels of grade VI tend to do better in vocabulary when grouped for reading by Joplin-type plan. Grade IV pupils at all levels and average grade V pupils tend to do better in vocabulary when not grouped by Joplin-type plan.

Written Language

Table 14 shows comparison of written language scores of pupils of the experimental and control groups in grades IV, V and VI at the total and the low, average and high levels. The total of grade IV pupils showed a mean score of 2.15 for the experimental group in written language. This difference is significant at the .20 level. The total

TABLE 14

SIGNIFICANT DIFFERENCES OF THE EXPERIMENTAL AND
CONTROL GROUPS BETWEEN MEANS OF WRITTEN
LANGUAGE SCORES FOR GRADES IV, V AND VI

	Sample Size		Mean Scores		Variance		Mean Diff.	<i>t</i>	P	<i>t</i>	P
	Exp.	Con.	Exp.	Con.	Exp.	Con.					
Grade IV											
Total	50	56	30.70	28.55	5.67	5.85	+2.15	1.89	.10	--	--
Low	10	7	28.47	28.68	5.66	4.40	-.21	--	--	32	NS
Average	29	31	30.71	27.42	5.49	5.64	+3.25	2.23	.05	--	--
High	11	18	32.71	29.61	5.42	6.51	+3.10	--	--	69.5	.20
Grade V											
Total	94	44	30.92	28.58	4.99	4.57	+2.34	2.85	.01	--	--
Low	13	8	26.80	26.00	4.28	2.84	+.80	--	--	33.5	NS
Average	53	28	30.77	28.69	4.59	4.39	+2.08	1.85	.10	--	--
High	28	8	33.00	30.09	4.43	4.94	+2.91	1.55	.20	--	--
Grade VI											
Total	50	61	31.78	30.15	5.95	6.20	+1.63	1.16	NS	--	--
Low	12	17	30.70	30.50	5.14	3.57	+.20	--	--	92	NS
Average	24	32	31.70	29.20	6.13	7.30	+2.50	1.31	.20	--	--
High	14	12	32.70	32.15	5.49	5.33	+.55	--	--	79.5	NS

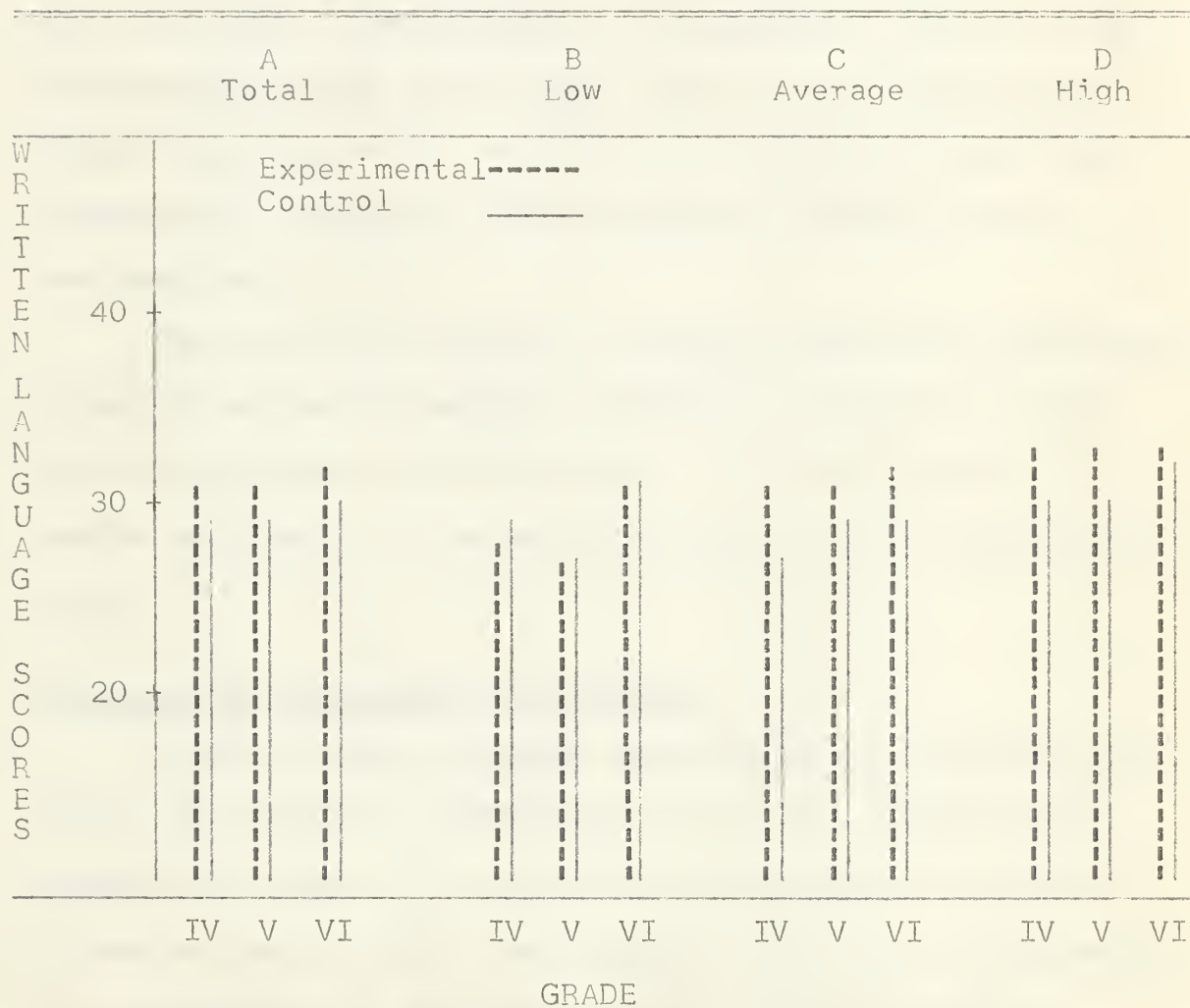
of grade V, with a difference of 2.34 for the experimental group is significant at .01 level. The total of the grade VI group had a mean difference of 1.63 for the experimental group but this difference was not significant. The Joplin-type plan of grouping for reading tends to bring about better results in written language, especially in grades IV and V. Grade VI pupils at the low level show a mean difference in written language of .21 for the control group which is not significant. At the average level a difference of 3.25 points for the experimental group is significant at the .05 level. The 3.10 points of difference for the experimental group at the high level is significant at the .20 level.

The experimental group of grade IV pupils does significantly better at the average level and tends to do better at the high level but not as well at the low level in written language as the control group.

A mean difference in written language of .80 points in favor of the experimental group at the low level grade V shows no significance. At the average level a difference of 2.08 points for the experimental group is significant at the .10 level. The mean difference of 2.91 points for the high level pupils of the experimental group is significant at the .20 level. Grade V pupils seem to do better in

FIGURE 6

GRAPHS SHOWING MEANS OF EXPERIMENTAL AND CONTROL GROUPS
OF THE TOTAL, THE LOW, AVERAGE AND HIGH LEVELS OF
GRADES IV, V AND VI WRITTEN LANGUAGE SCORES



written language when grouped for reading by Joplin-type plan, especially at the average and high levels.

At the grade VI low level the mean difference of .2 points for the experimental group in written language is not significant. At the average level the mean difference of 2.5 points for the experimental level is significant at the .20 level. A difference of .55 points in favor of the experimental group at the high level is not significant. Grade VI pupils do not do better in written language when grouped for reading by Joplin-type plan except at the average level.

The profile in figure 6 indicates that the experimental group did better in written language in grades IV, V and VI at the average and high levels. Low level pupils scored as highly in the control group as in the experimental group.

Comparative Development in Language

Table 15 shows language development by comparing mean scores of spelling, vocabulary and written language from grade IV to grade VI for both the experimental and control groups at each level. The purpose of this type of comparison is to determine if the pupils of the control groups in grades IV to VI show greater progress than the experimental

TABLE 15

DEVELOPMENT FROM GRADE IV TO GRADE VI FOR THE TOTAL,
THE LOW, THE AVERAGE AND THE HIGH LEVELS IN
SPELLING, VOCABULARY AND WRITTEN LANGUAGE

	SPELLING		VOCABULARY		WRITTEN LANGUAGE	
	Experi- mental	Control	Experi- mental	Control	Experi- mental	Control
Total	18.01	14.65	13.60	6.21	1.08	1.60
Low	7.58	11.70	9.49	.83	2.23	1.82
Average	15.87	17.80	11.02	6.50	.99	1.78
High	30.27	16.97	21.44	14.60	.01	2.54

groups. Although this type of comparison is not computed statistically, it does indicate trends in language development for the experimental and control groups.

Development in spelling has 3.3 points in favor of the experimental group. Both groups had the same mean score in grade IV. The experimental group shows 30.27 points to 16.97 in favor of the control group at the high level in spelling development from grade IV to grade VI. Spelling development at the low and average levels favor the control group by 4 and 2 points respectively.

Measured in terms of development in spelling it can be concluded that a Joplin-type plan of grouping for instruction in reading tends to produce better results in spelling at the high level but not at the low or average levels.

A difference in grade IV mean score and grade VI mean score of 13.60 for the experimental group in vocabulary was 7.39 higher than the 6.21 of the control group. The scores for vocabulary development at the low, average and high levels also were considerably higher for the experimental group as shown in Table 15.

The mean scores of vocabulary in grade IV were higher for the control at each level (Table 13). Measuring development in vocabulary by comparing grade IV and grade

VI scores indicates that the Joplin-type plan for instruction in reading is more apt to improve vocabulary than a form of intra-class grouping.

Development in written language as determined by differences in mean scores of 1.08 for the experimental group and 1.60 for the control group indicates that grade IV scores were almost as high as grade VI scores. The experimental group showed differences of .99 at the average level and .01 at the high level between grade IV and grade VI indicating little improvement in written language skills at these levels. The low level at 2.32 shows slightly more improvement. The control group showed differences of 1.82 at the low level, 1.78 at the average level and 2.54 at the high level, indicating some improvement at each level from grade IV to grade VI.

The Joplin-type plan of grouping for instruction in reading affords better opportunities for pupils to improve in written language in grade IV, but is not shown to offer the same opportunities in grade VI.

Summary of Language

Pupils instructed in reading in Joplin-type grouping did not achieve significantly higher spelling scores than pupils in intra-class groups as determined by this study. However, mean differences in spelling scores in grade V

and grade VI did approach significance indicating possible advantages to pupils in spelling achievement when grouped for reading by the Joplin-type plan. This is especially true at the high levels.

Except in grade VI, pupils grouped for instruction in reading by the Joplin-type plan did not achieve higher scores in vocabulary than pupils not grouped. Grade IV pupils achieved significantly higher scores in vocabulary when not grouped by the Joplin-type plan.

Grade V pupils and average level grade IV pupils achieved significantly higher scores in written language when grouped by the Joplin-type plan for instruction in reading. The average level of each grade and the high levels of grade IV and V did better in written language when grouped for instruction in reading by the Joplin-type plan.

Number of Books Read

Table 16 shows comparisons between mean scores of the number of books read by pupils of the experimental and control groups in grades IV,V and VI at the total for each grade and at the low, average and high levels.

The total of the grade IV group shows no significant difference between the means of the number of books read. The grade V total shows significance at the .05 level for the experimental group and grade VI group shows significance

TABLE 16

SIGNIFICANT DIFFERENCES OF THE EXPERIMENTAL AND
CONTROL GROUPS BETWEEN MEANS OF NUMBER
OF BOOKS READ BY GRADES IV, V AND VI

	Sample Size		Mean Scores		Variance		Mean Diff.	χ	P	χ	P
	Exp. Con.	Con.	Exp.	Con.	Exp. Con.						
Grade IV											
Total	52	56	7.38	7.48	4.57	4.95	- .10	.108	NS	--	--
Low	11	7	6.57	6.30	5.00	6.38	+ .27	--	--	30.5	NS
Average	30	31	7.36	6.93	4.52	4.89	- .57	.57	NS	--	--
High	11	18	7.66	8.06	4.32	4.27	- .40	--	--	95	NS
Grade V											
Total	43	45	8.37	6.17	4.07	5.49	+2.20	2.13	.05	--	--
Low	14	8	8.50	5.50	4.84	3.20	+3.00	--	--	36	.20
Average	15	29	8.53	6.03	2.65	6.00	+2.50	1.49	.20	--	--
High	14	8	8.07	6.12	4.24	5.19	+1.95	--	--	44	NS
Grade VI											
Total	51	61	8.36	7.22	5.78	5.00	+1.14	1.34	.20	--	--
Low	12	17	6.90	5.80	4.13	4.13	+1.10	--	--	85	NS
Average	24	32	10.04	6.40	7.10	4.03	+3.64	2.307	.02	--	--
High	15	12	6.86	11.50	3.94	6.11	-4.64	--	--	53.5	.10

at the .20 level for the experimental group. While only the grade V group resulted in statistical significance for the experimental group between the experimental and control groups on the number of books read, indications are that both grade V and VI pupils read more books when grouped for reading by Joplin-type plan. This is clearly graphed in figure 7 where the means of the number of books read at each level for each grade is depicted. For the total pupils the grade IV group on the average read about an equal number of books in the experimental and control groups. The grade V pupils of the experimental group, on the average read 2.2 more books than the pupils of the control group. Similarly, the grade VI pupils of the experimental group on the average read 1.14 more books than the pupils of the control group.

Less than one point of difference is shown between any of the levels in grade IV. Grouping for reading instruction by the Joplin-type plan did not increase the number of books read by grade IV pupils.

At the low and average levels of grade V the mean differences of 3.0 and 2.5 for the experimental group approached significance at the .20 level. The mean difference for the experimental group at the high level was 1.95 but this difference was not significant.

At the average level of grade VI the mean difference of 3.64 for the experimental group was significant at the .02 level. No significant difference was shown between the experimental and control groups at the low level but a difference of 4.64 for the control group was significant at the .10 level.

These findings are summarized in sections B, C and D of figure 7, from which several conclusions may be drawn.

The experimental group at the low level for each grade read more books than the control group, the greatest difference being 3.0 points in grade V.

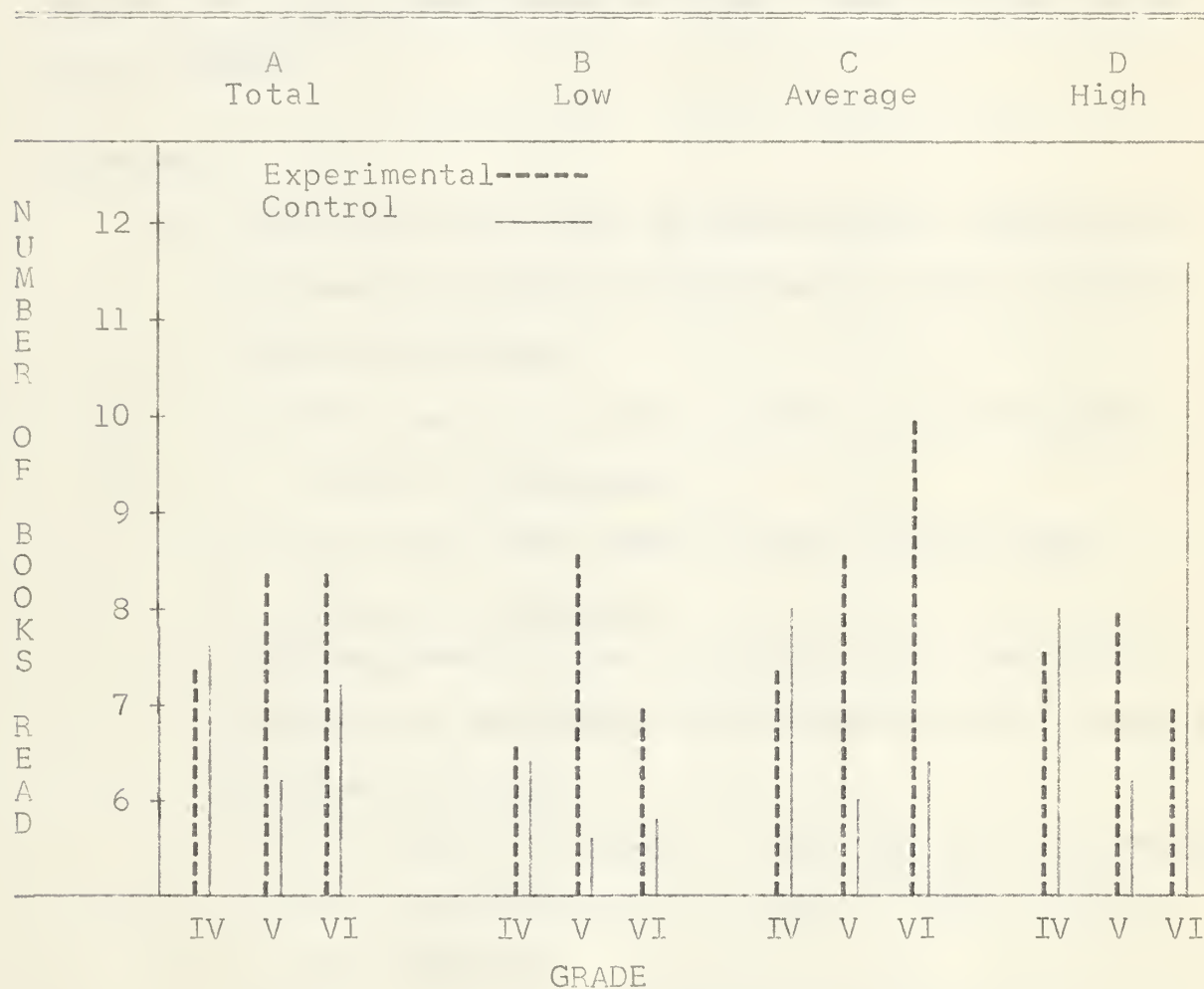
At the average level the grade V pupils of the experimental group read 2.5 more books than the pupils of the control group. The grade VI average level shows the experimental group reading 3.64 more books than the control group.

At the high level only the grade V pupils of the experimental group read more books (1.95) than the control group. The control group of grade VI read 4.64 more books than the experimental group.

It would seem that the Joplin-type plan of grouping encourages pupils to read a greater number of books than pupils not grouped by a Joplin-type plan. This is particularly true of grade V pupils at all levels and grade VI pupils at the low and average levels. Little difference

FIGURE 7

GRAPHS SHOWING MEANS OF EXPERIMENTAL AND CONTROL GROUPS
OF THE TOTAL, THE LOW, AVERAGE AND HIGH LEVELS OF
GRADES IV, V AND VI IN NUMBER OF BOOKS READ



is shown at any of the grade IV levels. High level grade VI pupils read more books when not associated with Joplin-type plan.

A Summary

Table 17 shows a summary of the differences of mean scores and their significance at each level for each grade in all areas.

Reading:

- A. The Joplin-type plan of grouping for instruction in reading produced significantly higher results in reading scores
 - 1. for pupils in grade VI after one and three years of grouping.
 - 2. for low level grade V pupils after three years of grouping.
- B. The Joplin-type plan of grouping for instruction in reading approached significantly higher results in reading scores
 - 1. for pupils in grade V after one year of grouping.
 - 2. for average pupils in grade V after one year of grouping
 - 3. for average pupils in grade VI after one year of grouping.

TABLE 17

SUMMARY OF SIGNIFICANCE OF MEAN DIFFERENCES
AT EACH LEVEL FOR ALL GRADES IN ALL AREAS

	Grade IV				Grade V				Grade VI			
	Total	Low	Average	High	Total	Low	Average	High	Total	Low	Average	High
Intelligence	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Reading												
After one year	NS	NS	NS	NS	.20	NS	.10	NS	.01	NS	.20	NS
After two years	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
After three years	NS	NS	NS	NS	NS	.05	NS	NS	.02	NS	NS	NS
Language												
Spelling	NS ⁺	NS	NS ⁺	.20 ⁺	.10	NS	NS ⁺	NS	.20	NS	NS	.20
Vocabulary	.001 ⁺	NS	.10	.20	NS	.20	.20	NS	.01	NS	.20	.05
Written Language	.10	NS	.05	.20	.01	NS	.10	.20	NS	NS	.20	NS
Number of Books Read	NS	NS	NS	NS	.05	.20	.20	NS	.20	NS	.02	.10

⁺ for the control group

Language:

- A. The Joplin-type plan of grouping for instruction in reading produced significantly higher results in vocabulary scores
 - 1. for pupils in grade VI
 - 2. for high pupils in grade VI.
- B. The Joplin-type plan of grouping for instruction in reading produced significantly higher scores in written language
 - 1. for grade V pupils
 - 2. for average grade IV pupils.
- C. Intra-class grouping for instruction in reading produced significantly higher scores in vocabulary
 - 1. for grade IV pupils.
- D. Intra-class grouping for instruction in reading approached significantly higher scores in vocabulary
 - 1. for average grade IV pupils
 - 2. for high grade IV pupils
 - 3. for average grade V pupils
- E. Intra-class grouping for instruction in reading approached significantly higher results in spelling scores
 - 1. for high grade IV pupils.

- F. The Joplin-type plan of grouping for instruction in reading approached significantly higher scores in spelling
 - 1. for grade V pupils
 - 2. for grade VI pupils
 - 3. for high grade VI pupils.
- G. The Joplin-type plan of grouping for instruction in reading approached significantly higher scores in vocabulary
 - 1. for low grade V pupils
 - 2. for average grade VI pupils.
- H. The Joplin-type plan of grouping for instruction in reading approached significantly higher scores in written language
 - 1. for grade IV pupils
 - 2. for high grade IV pupils
 - 3. for high grade V pupils
 - 4. for average grade V pupils
 - 5. for average grade VI pupils.

Number of Books Read:

- A. The Joplin-type plan of grouping for instruction in reading produced significantly higher number of books read

1. by grade V pupils
 2. by average grade VI pupils.
- B. The Joplin-type plan of grouping for instruction in reading approached significantly greater numbers of books read
1. by grade VI pupils
 2. by low grade V pupils
 3. by average grade V pupils.
- C. Intra-class grouping for instruction in reading approached significantly higher in numbers of books read
1. by high grade VI pupils.

CHAPTER V

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This study attempts to determine if the inter-class grouping of pupils for instruction in reading according to achievement in reading is more effective in terms of higher scores in reading and language than instruction in reading given in conventional intra-class groups. The plan of grouping evaluated is a form of inter-class grouping, a modification of the Joplin plan.

Few studies on grouping practices attempt to evaluate findings computed from results obtained from a working system. Statistical analyses based on reading and intelligence scores accumulated by an urban system comprise the material for this study except for the spelling and written language tests and the survey of the number of books read which were given specifically for this study. Data from records of three years were processed since it is probable that grouping for a three year period would be more effective than grouping for a one year period.

Pupils of grades IV, V and VI made up the population from which the experimental and control samples were drawn. In order to determine if the pupils of low, average or high ability would benefit by the grouping practice these three levels for each grade were set up for the experiment

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according to ability ratings as indicated by the intelligence tests.

As the relationship between reading and language is close, comparisons were made between spelling, vocabulary and written language scores as well as reading scores for the experimental and control groups. Further comparisons were made between the two groups as to the number of books read by the pupils of each group.

Findings and Conclusions

Reading

When comparisons were made within the limitations of the study the results on reading according to the hypothesis can be summarized as follows:

Hypothesis 1

That, when pupils who are grouped for instruction in reading by a Joplin-type plan are compared with those of intra-class groups, no significant difference is found between reading scores of the two groups in grades IV, V or VI:

- (a) after one, two or three years of grouping
- (b) at the low level after one, two and three years of grouping
- (c) at the average level after one, two and three years of grouping
- (d) at the high level after one, two and three years of grouping.

- (a) after one, two or three years of grouping.

This study does not reveal significant differences

in reading scores between the experimental and control groups in grades IV or V after one, two or three years of grouping. Indications are that there was a similar amount of reading development under either method of grouping in grades IV and V.

Significant differences for the experimental group were found for grade VI after one and after three years of grouping. Although the study showed no statistical differences between the groups after two years there appeared to be a slight tendency for the experimental group to achieve higher reading scores. The Joplin-type plan of grouping would appear effective as a method of classifying pupils for reading instruction in grade VI.

(b) at the low level after one, two and three years of grouping.

The experimental group of grade V pupils achieved significantly higher scores in reading than the control group at the low level after three years of grouping.

Although no significant differences at the low level appeared for either grade IV or grade VI the mean differences after three years of grouping for both these grades were in favor of the experimental group and were considerably greater than after one and after two years of grouping.

It might then be suggested that this study indicates low level pupils benefit from a Joplin-type plan of grouping after three years of grouping.

(c) at the average level after one, two and three years of grouping.

Average pupils of grade IV did not show significant differences in reading after one, two or three years of grouping. Reading scores of grade V and grade VI average pupils tended to significance after one year of grouping but not after two or three years of grouping.

(d) at the high level after one, two and three years of grouping.

No significant differences between means were found at the high level for grades IV, V or VI after one, two or three years of grouping.

The conclusions reached in regard to reading indicate that instruction in reading was equally effective when measured for the mean achievement of the total grade for the control and the experimental groups except for grade VI. The higher achievement in reading in favor of the grade VI experimental group could be the result of receiving instruction in reading in classes where the range of ability in reading was reduced.

In Clymer's¹ method of determining the range of individual differences in any heterogeneously grouped classroom ($2/3$ of the chronological age of the usual child in the classroom) the spread of reading ability in grade I would be about four grades and in grade IV about six grades. Since the range of abilities is not as great in the lower grades it would seem unlikely that a plan of grouping such as the Joplin-type would be as effective in these grades as one of the main purposes of such a plan is to "reduce the wide range in achievement" (Robinson²). According to the findings of this study the pupils of grade VI, where the range of ability is greatest, did better under Joplin-type plan.

The levels were set up for this study according to intelligence scores. Spache³ estimates that the correlations average about .50 when research relates mental age to reading. The criteria for setting up high, average and low levels were intelligence scores and consequently any disparity between intelligence and reading achievement

¹Clymer, loc cit

²Helen M. Robinson, "Reading Instruction in Various Patterns of Grouping," Conference on Reading (Chicago: University of Chicago Press, 1959) p 2.

³Spache, loc cit (Toward Better Reading) p 139.

was not taken into account. The pupils in the high levels might not have made the highest reading scores. Similarly, the weak readers were not necessarily included in the low levels for this study. Results might have been different had the levels been set up according to other criteria.

The experimental and control groups of the low level grade V pupils were separated by intelligence scores which tended to be higher for the experimental group. Despite the possible advantage of the higher intelligence of the experimental group, higher achievement in reading was not evident until after three years of grouping. It would seem that to be most effective as a means of improving reading, grouping should be practised over a period of time of no less than three years.

Grouping pupils by reading ability and instructing pupils in such a group is of no advantage to the average pupil according to the findings of this study. A reading program as outlined by the Teacher Guide Books of the various reading series or as planned by most teachers is designed for the average pupil. Such a program seemed equally effective for the average of both the experimental and control groups.

The results of this study agree with the findings made by Wilhems⁴ in his summary of 115 research projects

⁴Wilhems, loc cit

conducted on grouping in the three years prior to June 1960. His conclusions revealed no evidence that the top or average groups benefited but some evidence that the low group had some benefits by grouping for achievement.

Language

The findings deal with spelling, vocabulary and written language are set down in Hypothesis 2.

Hypothesis 2

That, when pupils who are grouped for instruction in reading by a Joplin-type plan are compared with those of intra-class groups no significant difference is found between the language scores of each group:

- (a) in spelling in grades IV, V and VI
- (b) in spelling at the low, the average or high levels for grade IV, V or VI
- (c) in vocabulary for grades IV, V and VI
- (d) in vocabulary at the low, average or high levels for grades IV, V and VI
- (e) in written language for grades IV, V and VI
- (f) in written language at the low, average or high levels for grades IV, V and VI.

- (a) in spelling in grades IV, V and VI.

In terms of highly significant results the findings of this study concur with hypothesis 2(a). However, there was a tendency for the differences of mean scores of grades V and VI in spelling scores to be significantly higher for the experimental group. Pupils grouped for instruction in reading in grades V and VI tend to do better in spelling.

(b) in spelling at the low, the average or high level for grades IV, V and VI.

Just as no highly significant differences were found in spelling between the two groups in grades IV, V and VI, there were no highly significant differences at the low, average or high levels for each of the grades. The only area where a trend to significance was reached was at the high levels for grades IV and VI. A trend to significance in favor of the control group was found for high level grade IV while the high level grade VI difference favored the experimental group.

(c) in vocabulary for grade IV, V and VI.

Grade IV vocabulary scores were significantly higher for the control group when compared with the experimental group. Significance between the two groups in favor of the experimental group was found in grade VI. No significance for vocabulary was found for grade V.

(d) in vocabulary at the low, average or high levels in grades IV, V and VI.

Mean differences between the two groups were highly significant for high grade VI pupils with a trend to significance shown for low grade V and average grade VI. The significances were in favor of the experimental group.

Average grades IV and V pupils as well as high grade IV pupils tended to significance in favor of the control group.

(e) in written language for grades IV, V and VI.

Grade V pupils achieved higher scores in written language when grouped by the Joplin-type plan in reading. The experimental group tended to achieve higher scores in grade IV also but no significance was found in grade VI.

(f) in written language at the low, average or high levels for grades IV, V and VI.

Average grade IV pupils did better in written language when grouped for reading by Joplin-type plan. There was a tendency for high level grades IV and V pupils to have a definite advantage in written language when grouped for reading.

Reading, spelling, vocabulary, written language and other areas of the language arts are closely interrelated. This close relationship was not always evident in this study. Grade VI pupils did better under the Joplin-type plan in reading and vocabulary and tended to achieve higher scores in spelling but not in written language. Grade V pupils benefited by the Joplin-type plan in written language and tended to score higher marks in spelling while grade IV pupils tended to do better in written language. Grade IV pupils achieved higher scores in vocabulary under intra-class grouping for reading.

The grade IV vocabulary test was the only one of the language tests not administered after three years of Joplin-type grouping. Due to incomplete cumulative records the vocabulary test of grade IV could not be used. This may not effect the findings but it illustrates one of the perils associated with evaluating a working system.

The results for vocabulary showed that the grade IV pupils of intra-class groups achieved more than those of the Joplin-type plan. The more diversified program resulting from reading instruction to a heterogeneous group under intra-class grouping seems to have certain advantages in teaching vocabulary. This, apparently, was not true for grades V and VI. The vocabulary results for the control group were the only areas in language or reading where the results were in favor of the control group.

The only area in which the grade IV group tended to show results for the experimental group was in written language. As already stated, no attempt was made to control the variables such as teachers or methods of instruction, but it would seem that the opportunities to encourage pupils to read critically and to draw conclusions from their reading were more prevalent under the Joplin-type plan. Grade V pupils also scored higher in written language under Joplin-type plan.

Both grades IV and V tended to significance at the average level in vocabulary in favor of the control group. As at the average level in reading there also seems to be an advantage to the instruction of vocabulary in intra-class grouping. Grade IV control group also tended to achieve higher scores in vocabulary and spelling at the high level.

Indications in reading were that after three years of grouping the low levels of grades IV and V tended to benefit by Joplin-type plan. The only low level language results were in vocabulary for grade V. Conversely no significant results in reading were evident at the high level yet reading scores of high level grades IV and V tended to significance in written language and grade VI were significant in spelling and vocabulary. These results were all in favor of Joplin-type plan. In language the high level seems to benefit more by Joplin-type plan. This may be due to the fact that the grouping plan made the reading class more homogeneous and instruction in language was directed to the high level.

The assumption has often been made that the average level pupils tend to achieve better in heterogeneous groups since instruction is usually directed to the average. This study showed better results in written language at the average

level for the experimental group in each grade. Reading instruction under Joplin-type plan for the average pupil did not result in significantly higher scores in reading but did show benefits in the written language results.

Number of Books Read

The findings in regard to comparisons between the experimental and control groups of the number of books read by pupils as outlined in Hypothesis 3 follow.

Hypothesis 3

That, when pupils who are grouped for instruction in reading by a Joplin-type plan are compared with those of intra-class groups no significant difference is found in the number of books read by each group

- (a) in grades IV, V and VI
- (b) at the low, average and high level in grades IV, V and VI.

(a) in grades IV, V and VI

The pupils of grade IV read more books when grouped for reading by Joplin-type plan. No significant differences were found in grades V or VI.

(b) at the low, average and high levels in grades IV, V and VI.

Average grade VI pupils of the experimental group read more books than those of the control group. Grade V pupils of the average and low levels tended to read more books when

grouped by Joplin-type plan. High level grade VI pupils tended to read more when not grouped for reading in intra-class groups.

It is difficult to draw conclusions regarding number of books read by pupils since the availability of books was not equal for all grades in each level. Some schools had a branch of the public library within their school while other schools were a considerable distance from a library other than their own school library. The school libraries were not equipped to supply the demand for pleasure reading since they were primarily reference libraries.

To supply the data for the study pupils were asked to write the titles of books they had read recently. Some pupils, under teacher guidance, had well-planned records of all the books they had read while other pupils trusted to memory. Since similar conditions were found with pupils of both the experimental and control groups the resulting information was used but may not be entirely accurate.

Implications

The results of this study show that there is an advantage to grouping elementary pupils of the higher grades for instruction in reading by a Joplin-type plan as measured by improved development in reading. This is evident particularly in grade VI. The implication here is that the higher

the grade the more effective the plan. The results in language also show that pupils of grades V and VI benefit more by Joplin-type plan as indicated by improved vocabulary and spelling scores.

The study indicates that the Joplin-type plan for instruction in reading is an effective plan for teaching reading to pupils of low intelligence level, especially if the practice is continued over a period of several years.

Although pupils of high intelligence did not benefit in reading by the experimental plan of grouping there is the indication that pupils of high intelligence benefit in language by being grouped for reading. Instruction in reading proved adequate in both the control and the experimental groups but indications are that language instruction was more effective when pupils of high intelligence level were taught language as a group.

Inter-class grouping for reading indicated no benefit to grade IV in reading or language except in written language. Two implications are suggested. It is not advantageous for elementary pupils of the lower grades to be grouped by Joplin-type plan in terms of improved reading. Yet, in written language the experimental pupils of grade IV were at a definite advantage.

Materials and methods used by teachers involved in

the study depended on individual teachers and schools. It appears very likely that the use of materials and methods specifically designed for the levels as set up by the Joplin-type plan of grouping even greater advantages would result for the experimental group.

Limitation of the Study

The conclusions of this study were limited by a number of conditions.

1. This study was limited to the pupils of grades IV, V and VI at an urban centre where each pupil's reading scores for a three year period had been recorded. The results might have been different had complete records been available for all pupils.
2. The samples for this study were drawn from the pupils of six elementary schools, each under the supervision of a principal who was in charge of the reading program for his school. Schools from which the experimental group was taken used their own methods of selecting, scheduling and instructing their reading groups. Variations were inevitable.
3. Variables such as teaching methods, teacher qualifications and materials used were not controlled but accepted as educationally sound since such variables are inherent in a typical school system.

4. In order to set up levels for each grade the intelligence scores available from the cumulative records made it necessary to use results from different tests for each grade in order to arrive at samples of statistically satisfactory size at each level.
5. When the levels were set up some of the low and high levels resulted in small sample sizes because of unequal distribution. It is possible that the small sample size at some of the levels may have effected the findings of this study.
6. Controlled experimental research permits a free choice of tests. This study depended on the results of intelligence and reading tests made available by the school system.

Suggestions for Further Research

The results of this study suggest other investigations which would add to existing research concerning grouping practices relating to reading.

1. This study reveals that achievement grouping tends to be more effective after three years of grouping. A long term experiment to determine if grouping practices are more effective after three, four, five or six years is recommended.

2. Considerable research evidence concerning correlations between vocabulary and reading are available but little has been done about relations between written language and reading. The findings of this study suggest a need to determine if a correlation between ability in written language and reading exists at fourth, fifth and sixth grade levels.
3. The findings of this study revealed no advantage in reading to high level pupils in inter-class reading groups but a definite advantage in language at this level. Further research should be carried out to verify these findings.
4. Few tests were available in the area of written language. The development of precise testing instruments in this area is necessary.
5. Comparatively little development in written language was shown from grade IV to grade VI. Future research in this area could reveal methods of instruction that would help teachers to continue to develop pupils' ability to supply written answers. According to this study the development of written language improved very little beyond grade IV (Table 15, Chapter IV).

Concluding Statement

Considerable research evidence is available regarding grouping but comparatively little of it derives from data accumulated from actual grouping practices in a working system. This study attempts to evaluate the practice of grouping grades IV, V and VI pupils for instruction in reading by a Joplin-type plan, and its effectiveness in teaching reading, spelling, vocabulary and written language.

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APPENDIX A
INTELLIGENCE TESTS

Revised by Tom A. Lamke, Ph.D., and M. J. Nelson, Ph.D.
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B
6-9

NAME _____	SCORE _____
GRADE _____	IQ _____
SCHOOL _____	MA _____
TEACHER _____	RANK _____

DATE OF TEST	Yr. _____	Mon. _____	Day _____
DATE OF BIRTH	Yr. _____	Mon. _____	Day _____
AGE	_____		

• The three practice exercises below are given so that you may see how to do the test.

Practice 1. Boys like to:

(1) run (2) hat (3) lost (4) red (5) same






Which word tells what boys like to do? Yes, *run* is the right answer. What is the number of the word *run*? The number is 1. Answer space number 1 has been marked to show that word number 1, *run*, is the right answer. You are to mark your answers in the same way.

Practice 2. I saw a . . . tree. A word for the blank is:

(1) quite (2) care (3) big (4) so (5) and









Mark the answer space that you think is right. Your mark should be in the answer space numbered 3.




Practice 3.  is to  as  is to:

(1)  (2)  (3)  (4)  (5) 

What is the number of the right answer? The answer, of course, is number 5, since a square is to a smaller square as a triangle is to a smaller triangle. Mark the answer space numbered 5.

• During the test, if you find that you have made a mistake and marked in the wrong answer box, do not erase your mark, but draw a circle around it and then mark in the right answer box.

- "No one will _____ me," complained the duck. A word for the blank is:
(1) help (2) after (3) walk (4) come (5) live
- Which of these words comes before the others in the dictionary?
(1) lean (2) short (3) bean (4) pretty (5) war
- Scales are to fish as wool is to:
(1) cotton (2) sheep (3) birds (4) silk (5) lakes
- The weather is warm in summer and _____ in winter. A word for the blank is:
(1) very (2) heat (3) long (4) plenty (5) cold
- Which word does not belong with the others?
(1) Lincoln (2) Roosevelt (3) Washington (4) Wilson (5) Chase
- Which month comes just before March?
(1) April (2) September (3) May (4) February (5) August
-  is to  as  is to: (1)  (2)  (3)  (4)  (5) 
- Which word does not belong with the others?
(1) maybe (2) perhaps (3) possibly (4) probably (5) never
- If the letters *rigoni* were arranged properly, they would spell:
(1) ignore (2) gorilla (3) rigid (4) origin (5) girder
- At a dinner there is always:
(1) a tablecloth (2) cutlery (3) company (4) merriment (5) food
- Joy means the same as:
(1) sleep (2) happiness (3) sorrow (4) help (5) noise
- If the letters *resae* were arranged properly, they would spell:
(1) racer (2) cares (3) raise (4) erase (5) recur
- 8652476394278459328497543 In this number, how many 4's come just before a 9?
(1) one (2) two (3) three (4) four (5) five



14. The high were rugged and bare. A word for the blank is:
(1) valleys (2) seas (3) mountains (4) lights (5) storms 1 2 3 4 5
15. 1, 7, 2, 7, 3, 7, What two numbers should come next?
(1) 5 and 7 (2) 4 and 7 (3) 2 and 6 (4) 3 and 7 (5) 6 and 7 1 2 3 4 5
16. To allow means the same as to:
(1) take (2) pursue (3) store (4) permit (5) cease 1 2 3 4 5
17.  is to  as  is to: (1)  (2)  (3)  (4)  (5)  1 2 3 4 5
18. 6430254172863495286482631 In this number, how many 6's come just before a 3?
(1) one (2) two (3) three (4) four (5) five 1 2 3 4 5
19. The sun sets in the:
(1) morning (2) dawn (3) moon (4) evening (5) airplane 1 2 3 4 5
20. Which word does not belong with the others?
(1) square (2) triangle (3) trapezoid (4) ellipse (5) rectangle 1 2 3 4 5
21. Man is to boy as cat is to:
(1) dog (2) snake (3) kitten (4) mouse (5) rat 1 2 3 4 5
22. If the letters t o i r e f f were arranged properly, they would spell:
(1) refresh (2) officer (3) forfeit (4) inferior (5) traffic 1 2 3 4 5
23. A coward always lacks:
(1) friends (2) courage (3) purpose (4) enemies (5) sense 1 2 3 4 5
24. Life is of great experiences. A word for the blank is:
(1) lined (2) composed (3) excited (4) walk (5) desire 1 2 3 4 5
25.  is to  as  is to: (1)  (2)  (3)  (4)  (5)  1 2 3 4 5
26. Short is to long as bare is to:
(1) snare (2) covered (3) show (4) open (5) next 1 2 3 4 5
27.  is to  as  is to: (1)  (2)  (3)  (4)  (5)  1 2 3 4 5
28. Nay means the same as:
(1) near (2) no (3) perhaps (4) since (5) some 1 2 3 4 5
29. 65435278451652872357625485 In this number, how many 5's are followed by a 2?
(1) one (2) two (3) three (4) four (5) five 1 2 3 4 5
30. The daughter of my father has a son. My father is her son's:
(1) grandfather (2) uncle (3) father (4) cousin (5) great-uncle 1 2 3 4 5
31. A gem is a:
(1) jewel (2) voter (3) sale (4) pest (5) stump 1 2 3 4 5
32. 17, 20, , , 29, 32. What two numbers should be on the dotted lines?
(1) 23 and 26 (2) 21 and 27 (3) 21 and 22 (4) 22 and 26 (5) 23 and 27 1 2 3 4 5
33. pints quart make a two If these words were arranged to make a good sentence, what would be the last letter of the first word?
(1) m (2) s (3) o (4) t (5) q 1 2 3 4 5
34. "Do not order the tree to be cut down which gives thee shade" means about the same as:
(1) The dream of the cat is all about mice. (2) Don't bite the hand that's feeding you.
(3) The crying cat catches nothing. (4) More just than a balance.
(5) The hasty and the tardy meet at the ferry. 1 2 3 4 5
35.  is to  as  is to: (1)  (2)  (3)  (4)  (5)  1 2 3 4 5
36. A vertebrate always has:
(1) legs (2) toes (3) arms (4) teeth (5) backbone 1 2 3 4 5
37. to like girls with play dolls If these words were arranged to make a good sentence, with what letter would the second word begin?
(1) t (2) g (3) l (4) w (5) p 1 2 3 4 5
38. — is to = as □ is to: (1)  (2)  (3)  (4)  (5)  1 2 3 4 5
39. 85, 94, 103, 112, What number should come next?
(1) 213 (2) 119 (3) 120 (4) 121 (5) 125 1 2 3 4 5

masculine is the opposite of:
(1) bitter (2) easy (3) inimical (4) sturdy (5) feminine 1 2 3 4 5

1.9, 10.8, 9.7, 8.6, 7.5, 6.4, . . . , What two numbers should come next?
(1) 7.5 and 8.6 (2) 5.3 and 4.2 (3) 5 and 4 (4) 6.3 and 5.2 (5) 5.3 and 4.1 1 2 3 4 5

To resume means to:
(1) offer (2) affect (3) forfeit (4) continue (5) use up 1 2 3 4 5

Which word does not belong with the others?
(1) solarium (2) academy (3) seminary (4) college (5) university 1 2 3 4 5

 is to  as  is to: (1)  (2)  (3)  (4)  (5)  1 2 3 4 5

Which word does not belong with the others?
(1) pepper (2) cloves (3) ginger (4) flour (5) cinnamon 1 2 3 4 5

40, 120, 60, 30, What number should come next?
(1) 20 (2) 15 (3) 10 (4) 25 (5) 40 1 2 3 4 5

When you multiply the length of a field by its width, you find its:
(1) perimeter (2) diagonal (3) area (4) volume (5) circumference 1 2 3 4 5

he big oak tree near the cottage had lost its A word for the blank is:
(1) growl (2) needles (3) blossoms (4) cones (5) foliage 1 2 3 4 5

To aggravate is to:
(1) irritate (2) amass (3) applaud (4) release (5) supplant 1 2 3 4 5

mistakes do students careful make not If these words were arranged to make good sentence, what would be the first letter of the second word?
(1) m (2) d (3) s (4) c (5) n 1 2 3 4 5

1, 8, 16, 32, What number should come next?
(1) 36 (2) 48 (3) 40 (4) 54 (5) 64 1 2 3 4 5

A genius always has:
(1) ability (2) friends (3) inventions (4) money (5) fame 1 2 3 4 5

library books many a has If these words were arranged to make a good sentence, what would be the first letter of the last word?
(1) s (2) b (3) a (4) h (5) y 1 2 3 4 5

Large is to **small** as **joy** is to:
(1) anger (2) fear (3) scorn (4) hate (5) sorrow 1 2 3 4 5

Better aim at a star than shoot down a well; you'll hit higher" means about the same as:
(1) Hasty climbers have sudden falls. (2) Aim above the mark to hit the mark.
(3) "Almost" kills no man. (4) Rash haste makes waste. (5) Might is not right. . . . 1 2 3 4 5

Two pints equal one liter. Three liters equal one rabeke. What is the cost of 5 rabeke of milk at 6¢ a pint?
(1) 90¢ (2) 30¢ (3) \$1.80 (4) 60¢ (5) \$3.60 1 2 3 4 5

he son of my father's nephew is my
(1) uncle (2) great-grandson (3) brother (4) second cousin (5) grandson 1 2 3 4 5









In an oration there are always:
(1) words (2) crowds (3) audiences (4) answers (5) questions 1 2 3 4 5

To adjust means to make a:
(1) profit (2) settlement (3) lecture (4) verse (5) gain 1 2 3 4 5

My father's son's sister may be my daughter's
(1) uncle (2) aunt (3) cousin (4) grandmother (5) niece 1 2 3 4 5

Expand is the opposite of:
(1) intake (2) propound (3) contract (4) impound (5) dead 1 2 3 4 5

A cymbal is used in:
(1) gardening (2) surgery (3) painting (4) sculpture (5) music 1 2 3 4 5

 is to  as  is to: (1)  (2)  (3)  (4)  (5)  1 2 3 4 5

Refer means to:
(1) retain (2) delay (3) dishearten (4) appeal (5) attribute 1 2 3 4 5

An empty wagon rattles most" means almost the same as:
(1) Nothing succeeds like success. (2) Trouble is never far away.
(3) The poor are always with us. (4) A barking dog seldom bites.
(5) True gold fears no fire. 1 2 3 4 5

66. To devour is to:
(1) hunt (2) pounce (3) beat (4) snare (5) eat [1] [2]
67. 32, 16, 8, What two numbers should come next?
(1) 4 and 2 (2) 4 and 0 (3) 4 and 1 (4) 2 and 0 (5) 4 and $\frac{1}{2}$ [1] [2]
68. A book of the Old Testament is:
(1) Matthew (2) Luke (3) Psalms (4) Revelation (5) Corinthians [1] [2]
69. fruit children good cereals are for and If these words were arranged to make a good sentence, what would be the second word?
(1) fruit (2) children (3) good (4) cereals (5) and [1] [2]
70. Ice is to water as water is to:
(1) steam (2) cold (3) river (4) thirst (5) land [1] [2]
71. A bank often fails when its assets are not sufficient to its outstanding notes.
A word for the blank is:
(1) redeem (2) comprehend (3) liability (4) initiate (5) specify [1] [2]
72. A demure person is always:
(1) modest (2) buoyant (3) intelligent (4) ill (5) dependable [1] [2]
73. The son of my brother's father is my:
(1) nephew (2) uncle (3) brother (4) son (5) father [1] [2]
74. Prosperity is to happiness as adversity is to:
(1) success (2) sorrow (3) fun (4) rage (5) joy [1] [2]
75. A wheel always has:
(1) an axle (2) circumference (3) paint (4) a tire (5) spokes [1] [2]
76. Which word does not belong with the others?
(1) apparatus (2) foundation (3) equipment (4) device (5) appliance [1] [2]
77. "Occasions, like clouds, pass away" means about the same as:
(1) Opportunity knocks but once. (2) Rainy days are dreary.
(3) It's no use to hammer cold iron. (4) Strew no roses before swine.
(5) Soon ripe, soon rotten. [1] [2]
78. The niece of my daughter's grandmother is my
(1) aunt (2) cousin (3) grandchild (4) daughter (5) sister [1] [2]
79. Better implements are an of advance in civilization. A word for the blank is:
(1) era (2) impediment (3) epicure (4) indication (5) escape [1] [2]
80. Accumulate is the opposite of:
(1) nice (2) accommodate (3) dissipate (4) trust (5) sew [1] [2]
81. Which word does not belong with the others?
(1) interminable (2) perpetual (3) transitory (4) enduring (5) immutable.... [1] [2]
82. Tyrol is a mountainous province in the:
(1) Alps (2) Pyrenees (3) Rockies (4) Andes (5) Himalayas [1] [2]
83. On an addition test a boy got 12 problems right, giving him an accuracy of 75%.
How many problems did he miss?
(1) 8 (2) 9 (3) 6 (4) 4 (5) 3 [1] [2]
84. Ambiguous means about the same as:
(1) nice (2) two-wheeled (3) porous (4) indefinite (5) succinct [1] [2]
85. Electricity is to wire as gas is to:
(1) flame (2) spark (3) hot (4) pipe (5) stove [1] [2]
86. Which word does not belong with the others?
(1) rostrum (2) structure (3) cathedral (4) edifice (5) building [1] [2]
87. 625, 125, 25, 5, What number should come next?
(1) 1 (2) 2 (3) 3 (4) 4 (5) 0 [1] [2]
88. Disapproval is to censure as approval is to:
(1) success (2) favorite (3) commend (4) reprehend (5) satisfaction [1] [2]
89. Water is twice as heavy as a certain kind of wood. Iron is 14 times as heavy as the wood.
Iron is how many times as heavy as water?
(1) 7 (2) 12 (3) 14 (4) 16 (5) 28 [1] [2]
90. To vilify means to:
(1) slander (2) clarify (3) anger (4) rectify (5) augment [1] [2]

OTIS QUICK-SCORING MENTAL ABILITY TESTS

SCORES	
Nonv.	
Verbal	
Total	

By ARTHUR S. OTIS, Ph.D.
Formerly Development Specialist with Advisory Board,
General Staff, United States War Department

ALPHA TEST: FORM B

For Grades 1-4

IQ.....

Alpha

B

Name.....Age.....Grade.....

Teacher.....Date.....19.....

School.....City.....



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U

Otis Quick-Scoring: Alpha: B

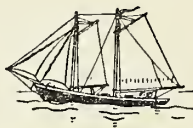
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3



4



5



6



7

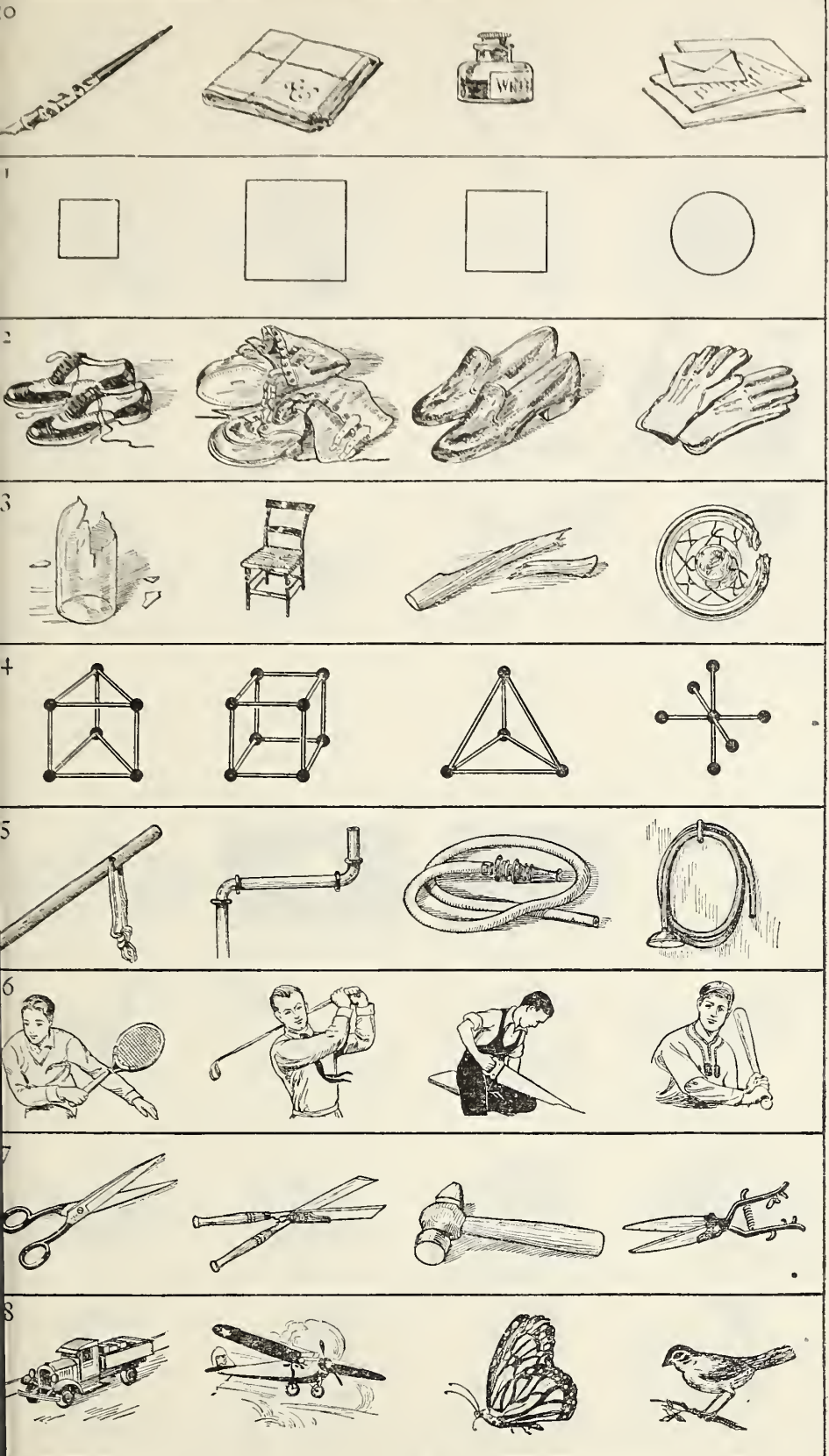


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9





19



20



21



22



23

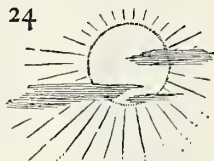
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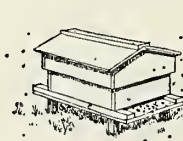
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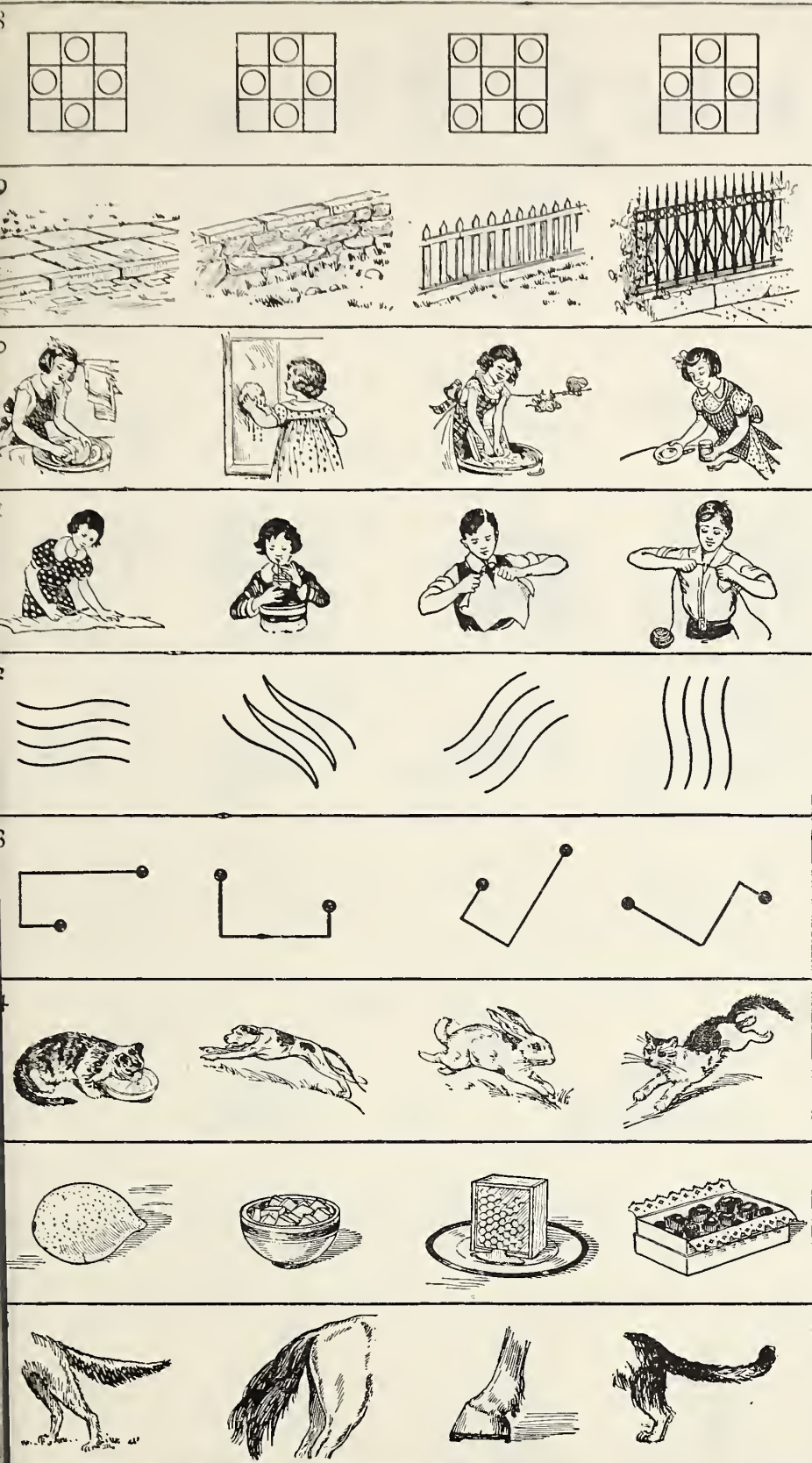


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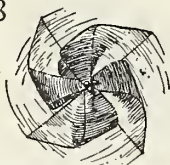
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Otis Quick-Scoring Alpha: B

37



38



39



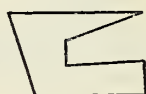
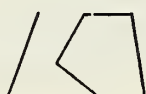
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41



42



43



44

75469 | 75409 | 75409 | 75409

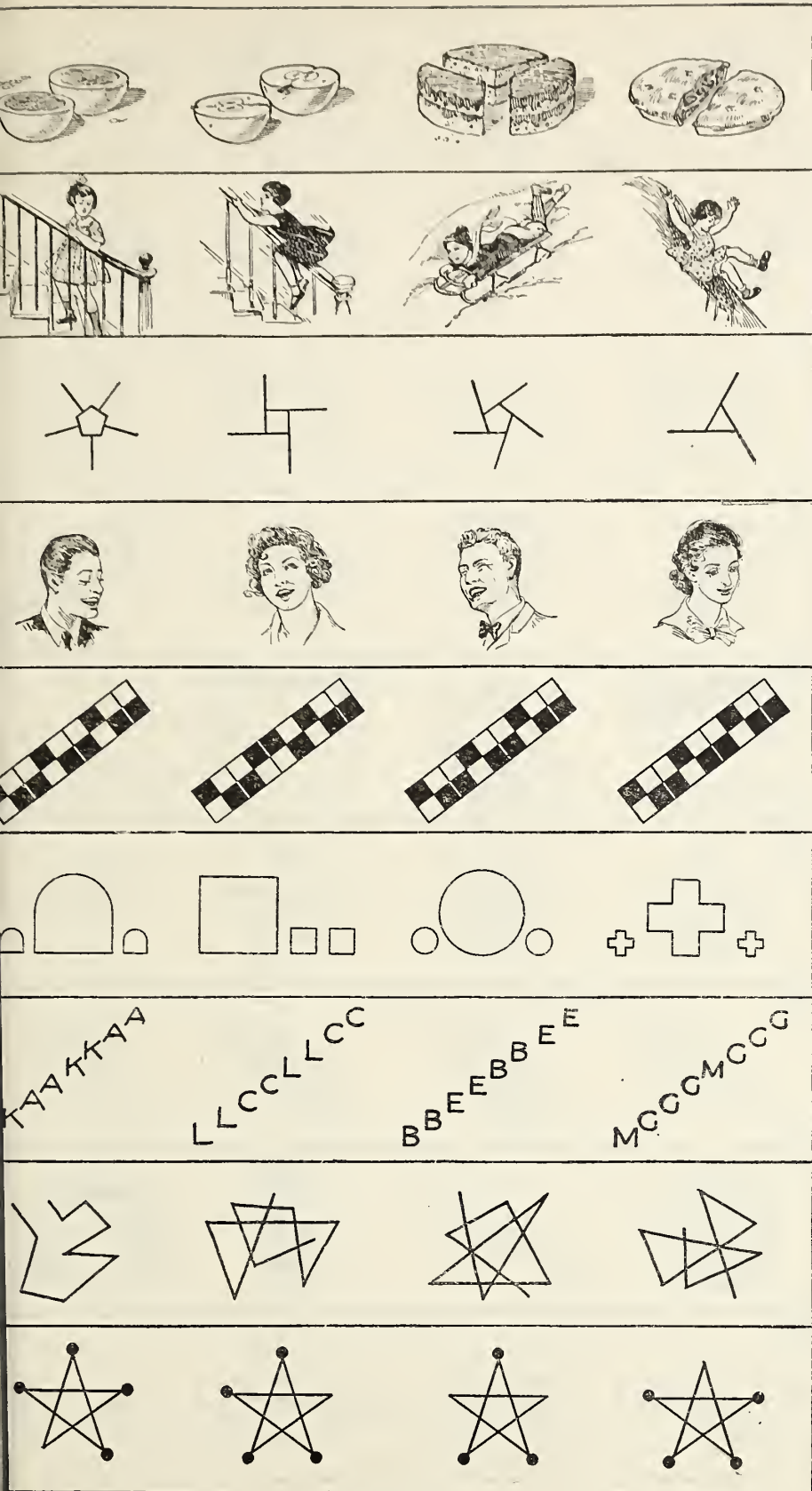
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$$\frac{4}{2} = 6$$

$$\frac{3}{5} = 8$$

$$\frac{8}{7} = 9$$

$$\frac{3}{4} = 7$$



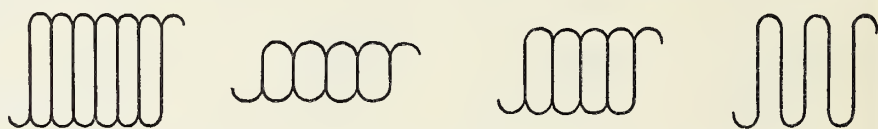
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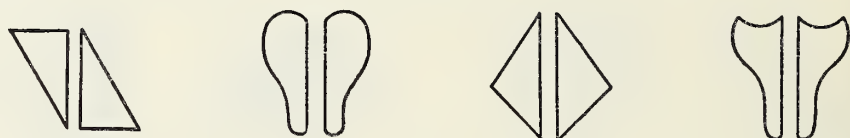
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CTC LAL RHR MPS

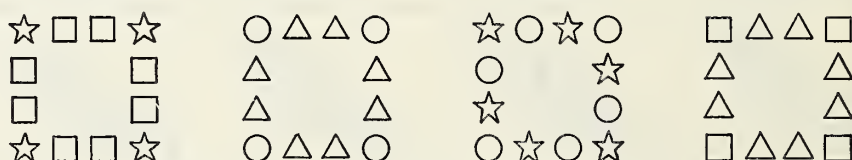
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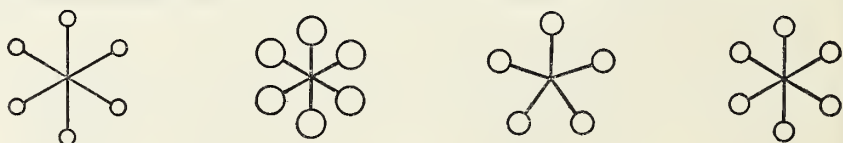
58



59



60



61



62



63

1-2-3-4 | 7-5-1-3 | 5-6-7-8 | 3-4-5-6



U

Otis Quick-Scoring: Alpha: B

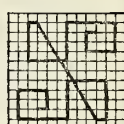
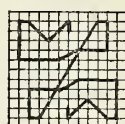
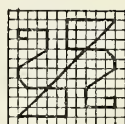
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74



75



76

2-4-8

3-6-12

1-2-3

4-8-16

77



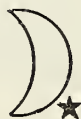
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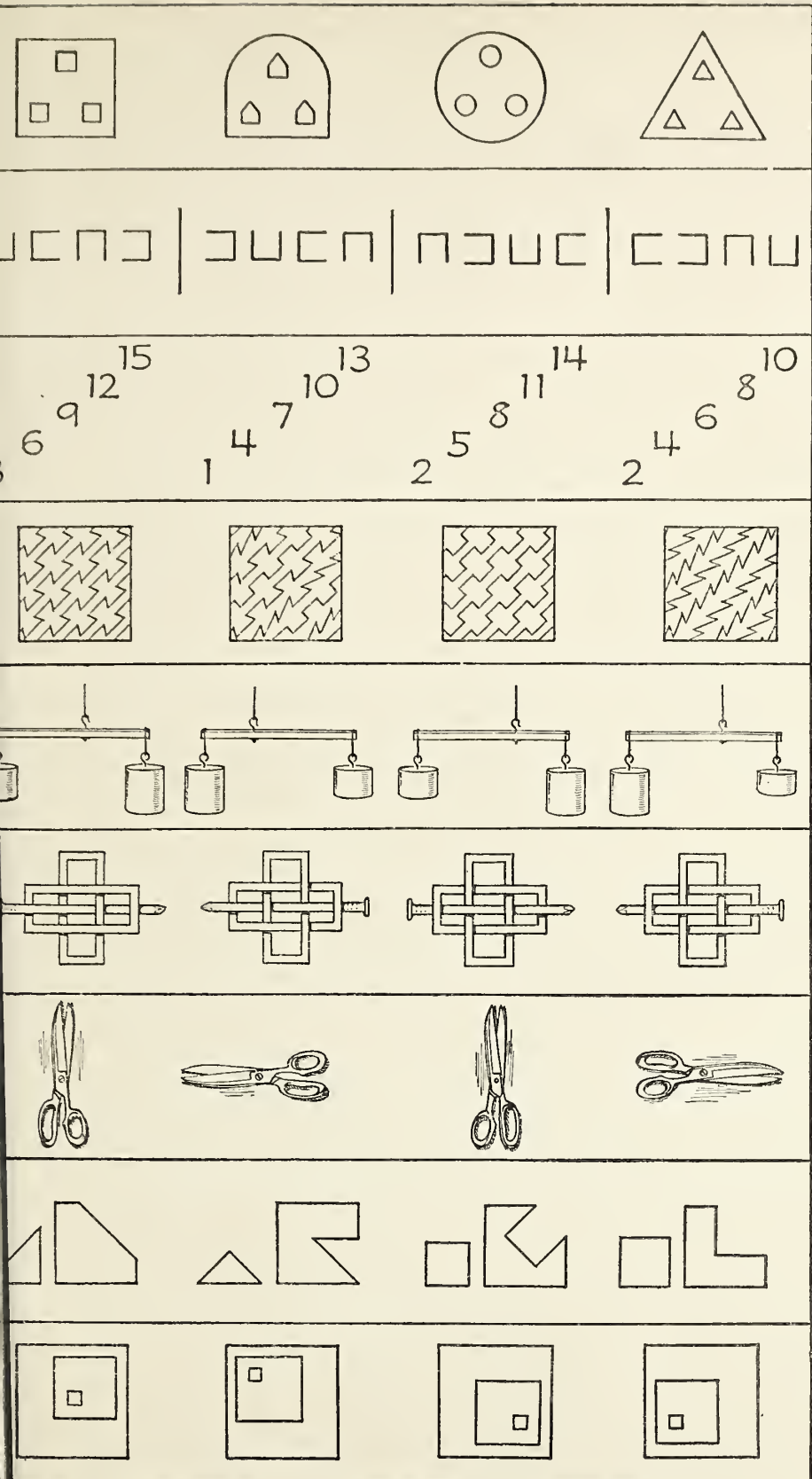


80



81





OTIS GROUP INTELLIGENCE SCALE

Devised by ARTHUR S. OTIS

PRIMARY EXAMINATION: FORM A

My name is.....

My birthday is.....

On my last birthday I was years old.

I am in the grade.

The name of my school is.....

The name of this city is.....

The date today is.....

(Do not write below this line.)

Remarks or Further Data

1.....

2.....

3.....

4.....

5.....

6.....

7.....

8.....

9.....

10.....

11.....

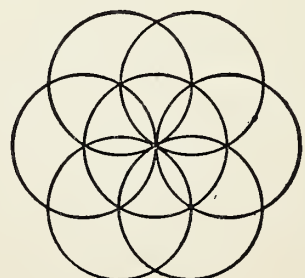
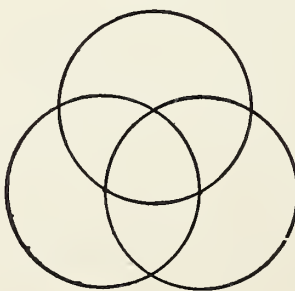
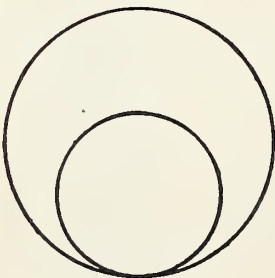
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13.....

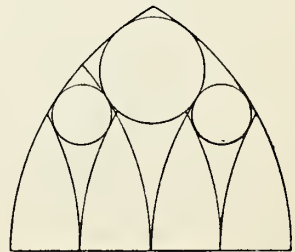
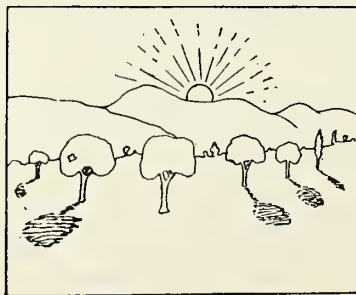
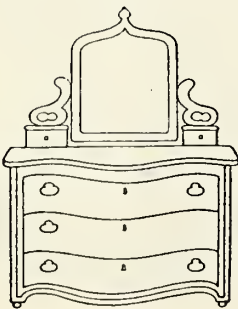
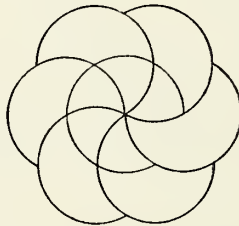
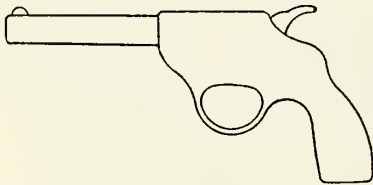
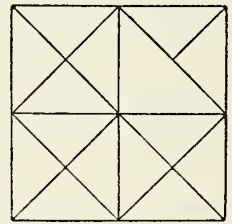
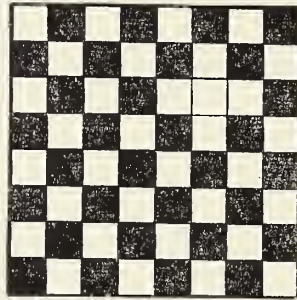
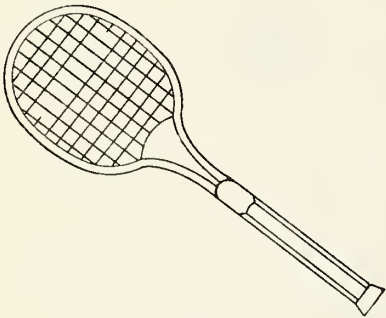
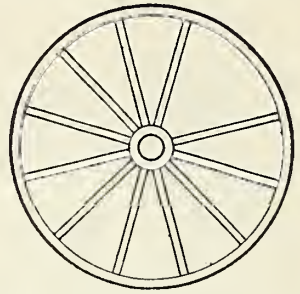
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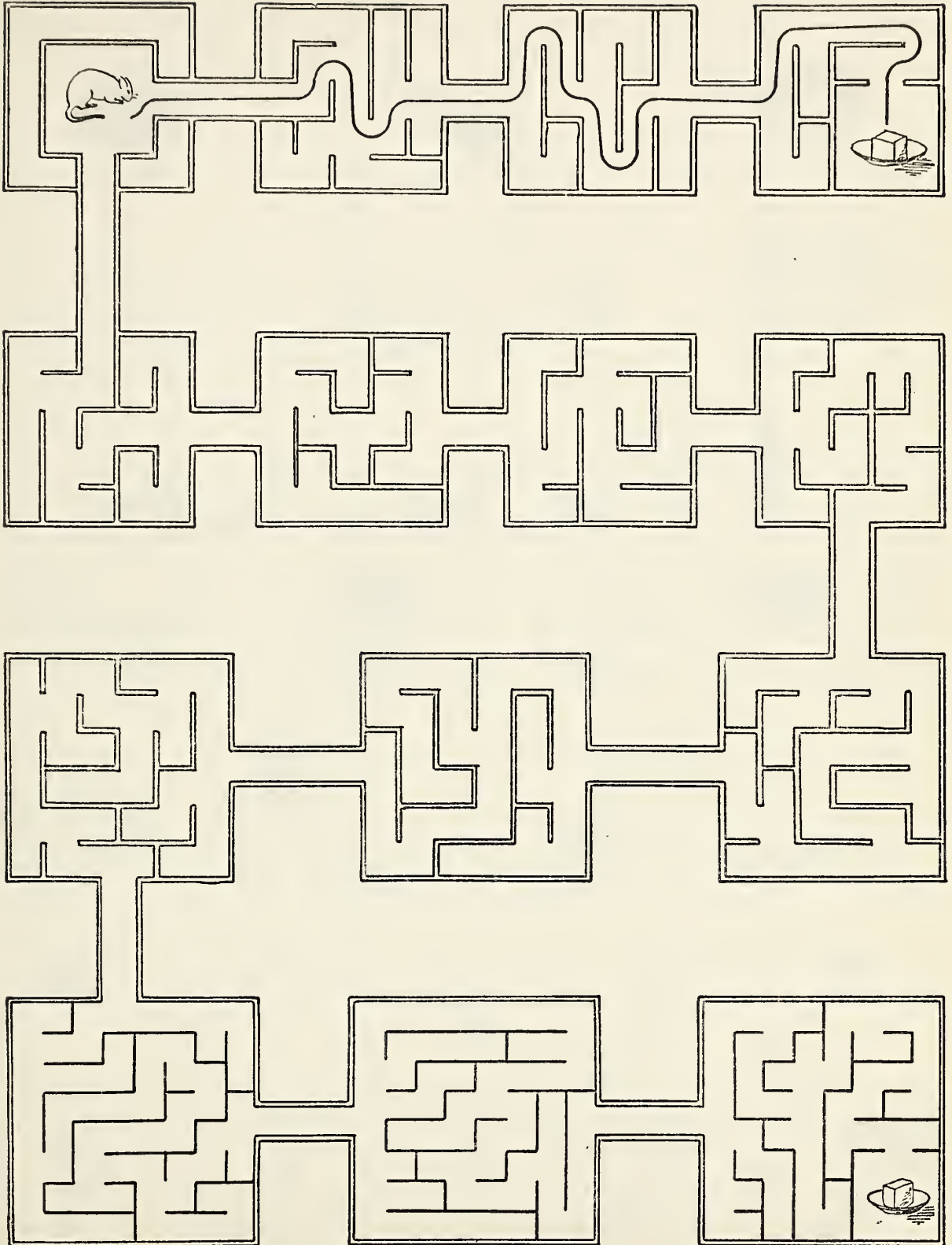
15.....

TEST	SCORE
1	
2	
3	
4	
5	
6	
7	
8	
Total Score	
Norm	
IQ	
PR	

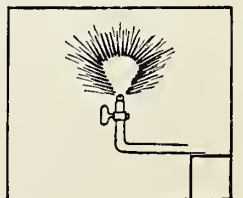
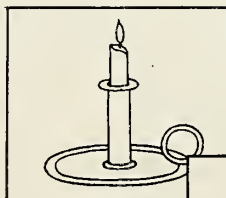
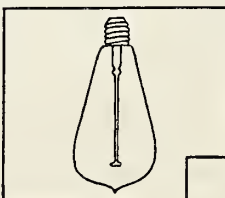
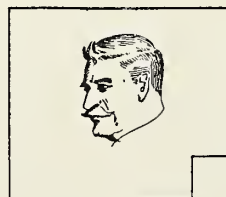
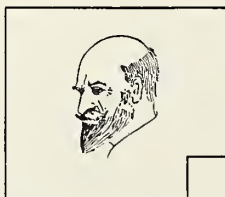
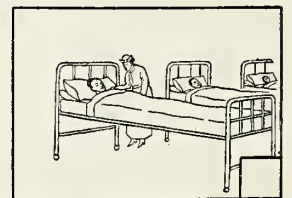
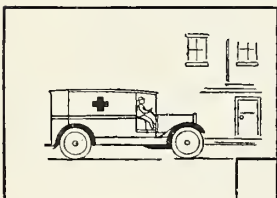
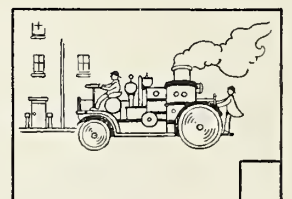
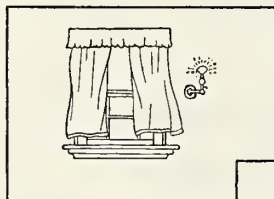
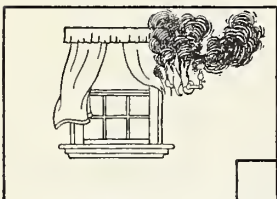
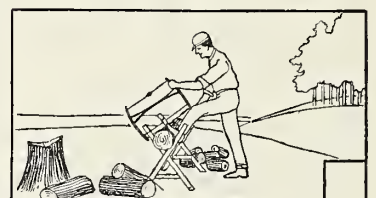
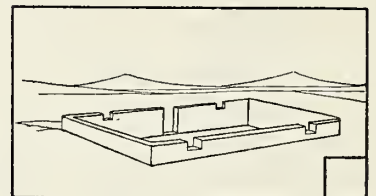
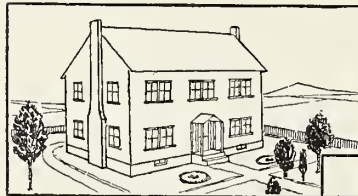
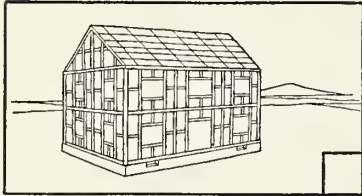
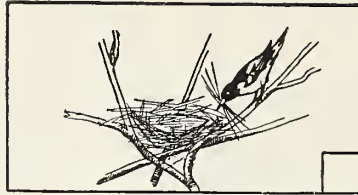








Score.....



Score.

							
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Score.....

A S O

B S O

C S O

D S O

E S O

F S O

G S O

H S O

I S O

J S O

K 1 2 3

L 1 2 3

M 1 2 3

N 1 2 3

O 1 2 3

P 1 2 3

Q 1 2 3

R 1 2 3

S 1 2 3

T 1 2 3

Score.....

Score.....

APPENDIX B
READING TESTS



Upper Primary • GRADES
3 and 4 • Form X

California Reading Test

W X Y Z SERIES

DEvised BY ERNEST W. TIEGS AND WILLIS W. CLARK

U
P
X

TO BOYS AND GIRLS:

This booklet has some games you will like. They will show how many words you know and how well you can read. Do as many of them as you can.

DO NOT TURN THIS PAGE UNTIL TOLD TO DO SO.

1957 EDITION

8th Printing

TEST 1 — SECTION A

DIRECTIONS: Look at the boxes below. I shall read one word in each box. You are to draw a line under it.

Sample A

Sample B

go	<u>ball</u>
<u>have</u>	this
run	come

Diagnostic Notes

1. man cow let	2. THAN THIS THEN	3. road rod run	4. bead bed bide
5. guess grass geese	6. hour heir honor	7. BESIDE BEHIND BEHOLD	8. COAST COARSE COACH
9. form from frog	10. perhaps permit prepare	11. <i>bake</i> <i>make</i> <i>cake</i>	12. simple thank sample
13. contend content contest	14. loud lead load	15. country county carpet	16. form forth froth
17. PRODUCT PROLONG PRODUCE	18. soldier should shoulder	19. BROUGHT BOUGHT BRIGHT	20. MUSICAL MAGICIAN MUSICIAN

Sample C. black green
 big
Sample D. little white
 run

14. multiply	finished restaurant
15. began	restful
16. restless	divide product
17. indoors	attic shy
18. basement	thankful
19. thankless	outdoors thoughtless
20. smooth	crooked rough
21. pain	never
22. always	numb pleasure
23. selfish	money generous
24. buy	loss
25. profit	gain sell

3 **DIRECTIONS:** Read each sentence below and do what it says.

Sample E. Draw a line under this word: run

Diagnostic Notes

1. Write this word: **cat** _____
2. Draw a line under this number: 3
3. Write the missing letter in this word:
b____y boy
4. Put an X on one of the numbers
below:
6 8 3 2
5. Write a word that begins with **c**.

6. Put an 0 after this 4_____
7. Cross out all of the letters:
8 R 9 L 6 4
8. Draw a line under the name of the
smallest animal:
pig mouse horse elephant
9. Cross out a letter to make **her** out of
this word: **here**
10. Write the number that is three times
two on this line: _____

11. Put a period at the end of the sentence below:

It is time to go home

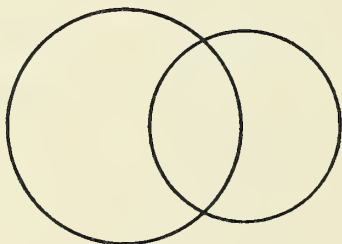
12. Write the first letter of this sentence on this line: _____

13. Draw a line above the letter G, put a circle around the letter N, and draw a line under the letter K in the row below:

E F G H I J K L M N O P

14. Cross out all of the words that have the letter **i** in them in sentence number 14.

15. Write the second word of **this** sentence in the large circle only. Put the last letter of the third word in **this** sentence in the part that is in both circles.



4

DIRECTIONS: Read the following questions and problems. Draw a line under each correct answer.

Diagnostic Notes

1. A table of contents is found in what part of a book?
beginning middle end
2. The index of a book is found in the
beginning. middle. end.
3. The word **little** is found in what part of the dictionary?
beginning middle end
4. The word **draw** is found in what part of the dictionary?
beginning middle end

✓ Read this list of words and find the answers to questions 5, 6, 7, and 8.

grain	grand
cake	for
airplane	duck
guess	far
brown	eat

If the above words were arranged alphabetically,

5. **eat** would come next after
duck. airplane. for.
6. **grand** would come next after
guess. grain. brown.
7. **far** would come next after
cake. eat. for.
8. **for** would come after
grain. guess. airplane.

- ✓ Look at the following Table of Contents and find the answers to questions 9, 10, and 11.

Diagnostic Notes

TABLE OF CONTENTS

Chapter	Page
1. A Basket of Apples.....	8
2. Tom and His Neighbors.....	12
3. The Pet Parade.....	18
4. Patsy and the Clown.....	23
5. Reddy Fox.....	28
9. Draw a line under the number of the page which shows where "Tom and His Neighbors" begins.	
8 12 28	
10. Page 25 will tell us something about the fox. the clown. Tom.	
11. The story of "The Pet Parade" is found on pages	
18 through 22. 18 through 23.	
23 through 27.	

- ✓ Look at this partial index and find the answers to questions 12 and 13.

INDEX

Food, 244-249.

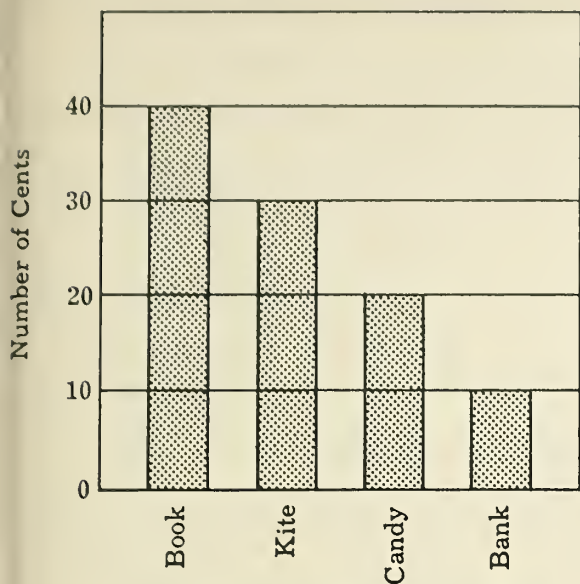
Group living: at home, 29-32; at school, 12-22; meeting strangers, 95-97; with neighbors, 36-40; with visitors, 92-94.

12. Draw a line under the number which shows on what page information concerning group living with neighbors may be found.
- 32 36 94
13. Information on page 93 will be about meeting strangers.
living with visitors.
living with neighbors.

TEST 2—SECTION D (Continued)

Diagnostic Notes

Look at the graph below and find the answers to questions 14 and 15.



How Jimmy Spent His Allowance

Draw a line under the number that tells how much Jimmy spent for a book.

10¢ 30¢ 40¢

Draw a line under the number that tells how much money Jimmy got for an allowance.

50¢ 70¢ \$1.00

5

DIRECTIONS: Read each of the stories. Do what it says under each story.

Ruth has a kitten.
The kitten's name is Puss.
Jack has a dog.
Its name is Fido.

Diagnostic Notes

✓ **Draw a line under each correct answer.**

1. The best name for this story is
 "The Dogs." "The Pets."
 "The Toys."
2. Ruth has a
 dog. kitten. ball.
3. Fido is the name of a
 rabbit. dog. city.
4. Puss is the name of a
 kitten. dog. city.
5. The dog belongs to
 Ruth. Father. Jack.

Ruth said, "See my doll.
Its name is Cindy."
Betty said, "May I play with Cindy?"

6. Draw a line under the best sentence
to finish the story.
 Ruth said, "Give Cindy to me."
 Ruth said, "Yes, you may play with
 Cindy."
 Ruth said, "Cindy can run."

✓ **Draw a line under each correct answer.**

7. Cindy belongs to
 Betty. Cathy. Ruth.
8. The best title for this story is
 "Ruth's Doll." "Cindy Can Play."
 "The Dog."
9. Ruth (asked told) something.
10. Betty (asked told) something.

TEST 2—SECTION E (Continued)

Diagnostic Notes

A small boy named Henry lived in the city.
He had a pet dog, a kitten, and two birds in
his home. Henry liked to play with his dog
most.

Draw a line under each correct answer.

The best title for this story is

“Parents.” “Books.” “Pets.”

This boy lived in the

mountains. country. city.

Henry was

small. large. sad.

The animal the little boy liked best was

the kitten. the dog. the bird.

The children in Mrs. Smith's room talked
out how to make scrapbooks. Jane brought
the pictures. Billy brought some scissors
& paste. Martha brought some paper. The
children decided that they would need more
than they had. To make paste they
would need water, flour, and salt. Jane said
she could bring a pan in which to mix them.

Draw a line under the best sentence
to finish the story.

The children decided that they would
buy paste.

The children decided that paste is
not useful.

The children decided that they would
make the paste.

Draw a line under each correct answer.

Martha brought

paper. some pretty pictures. paste.

The children were

busy. lazy. playing.

The farmer plants wheat early in the spring. It will grow fast when the days are warmer and there is rain. First, the farmer must get the ground ready for planting. After that, the wheat needs little attention until the harvest in the summertime. Then there is much work to do.

✓ Draw a line under each correct answer.

18. Raising wheat requires much work
before planting and after it is ripe.
all during the time it is growing.
throughout the year.
19. For the wheat to grow, there should be
cool, dry weather.
an even climate all year round.
warm days and plenty of water.
20. **Attention** in this story means
listening. care. hearing.
21. In this story, **fast** means the opposite of
start. quick. slow.
22. In this story, **needs** means the same as
plants. requires. harvests.

The following things are told in the story:

The farmer prepares the ground.
During harvest there is much work to do.
Farmers plant wheat in the early spring.

✓ Draw a line under the number that tells the order in which the above things are told in the story.

23. "The farmer prepares the ground" was
1st. 2nd. 3rd.
24. "During harvest there is much work to do" was
1st. 2nd. 3rd.
25. "Farmers plant wheat in the early spring" was
1st. 2nd. 3rd.

WORD FORM

DIRECTIONS: Look at the words below. If two words are the same or mean the same, write S on the line between them. If they mean different things, write D.

Sample F. dog S dog
Sample G. boy D girl

- | | | | | |
|-----|--------------------|-------|---------------------|------------------|
| 1. | cat | _____ | cat | Diagnostic Notes |
| 2. | the | _____ | is | |
| 3. | each | _____ | when | |
| 4. | am | _____ | ma | |
| 5. | which | _____ | which | |
| 6. | saw | _____ | was | |
| 7. | bad | _____ | dab | |
| 8. | though | _____ | thought | |
| 9. | open | _____ | open | |
| 10. | place | _____ | plate | |
| 11. | <i>send</i> | _____ | <i>send</i> | |
| 12. | <i>these</i> | _____ | <i>those</i> | |
| 13. | <i>stove</i> | _____ | <i>stove</i> | |
| 14. | <i>production</i> | _____ | <i>prediction</i> | |
| 15. | RUN | _____ | SUN | |
| 16. | INCLUDE | _____ | INCLUDE | |
| 17. | REPEAT | _____ | RESEAT | |
| 18. | INVITE | _____ | invite | |
| 19. | <i>procession</i> | _____ | POSSESSION | |
| 20. | presidential | _____ | <i>presidential</i> | |
| 21. | <i>nostalgia</i> | _____ | <i>nostalgic</i> | |
| 22. | MICROSCOPIC | _____ | MICROSCOPIC | |
| 23. | EXCEPT | _____ | expect | |
| 24. | <i>commemorate</i> | _____ | <i>commensurate</i> | |
| 25. | superficial | _____ | <i>superficial</i> | |



California Reading Test

Upper Primary • GRADES 3 and L4 • Form X

DEvised BY ERNEST W. TIEGS AND WILLIS W. CLARK

See MANUAL for instructions.

TEST SECTION

1. READING VOCABULARY

A. Word Recognition

20

B. Meaning of Opposites

25

TOTAL (A + B)

45

2. READING COMPREHENSION

C. Following Directions

15

D. Reference Skills

15

E. Interpretation of Material

25

TOTAL (C + D + E)

55

READING GRADE PLACEMENT

CHRONOLOGICAL AGE GRADE PLACEMENT

ACTUAL GRADE PLACEMENT

INTELLIGENCE (M.A.) GRADE PLACEMENT

Grade Placement

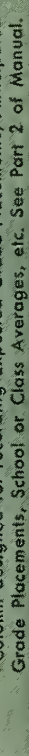
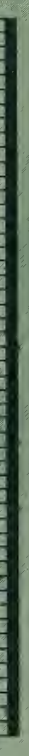
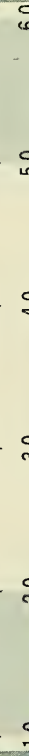
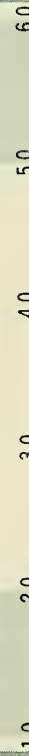
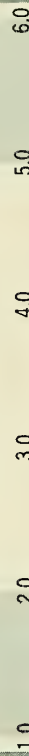
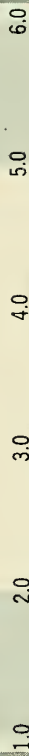
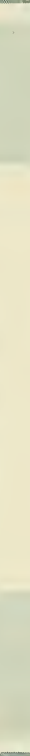
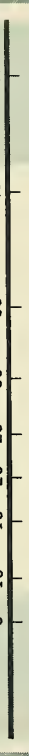
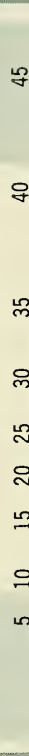
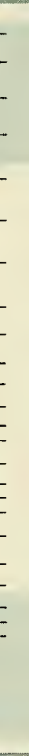
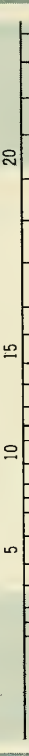
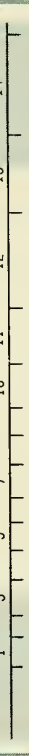
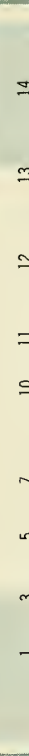
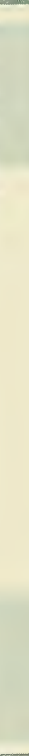
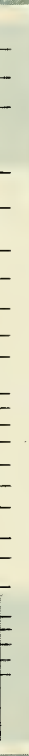
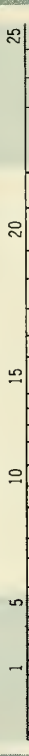
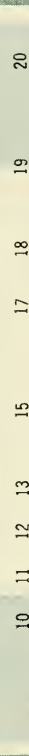
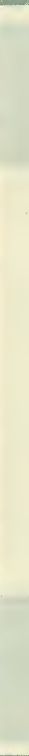
Percentile Rank

* For an interpretation of green area within Profile, see discussion on Articulation in Part 4 of Manual.

Name _____ Grade _____ Boy Girl
Last First Middle
School _____ Date of Test _____
Teacher or Examiner _____ Date of Birth _____
() Pupil's Age _____
Month Day Year

DIAGNOSTIC PROFILE* (Chart Pupil's Scores Here)

Grade Placement



DIAGNOSTIC ANALYSIS OF LEARNING DIFFICULTIES

1. Reading Vocabulary

A. WORD FORM:

1, 12 Gross differences

2, 3, 6, 7, Final sounds

8, 9, 10, Middle sounds

13, 15, 16, Initial sounds

17, 18, Gross differences

4, 5, 14, Final sounds

19, 20, Middle sounds

11 Initial sounds

B. MEANING OF OPPOSITES:

1-25 Basic vocabulary

2. Reading Comprehension

C. FOLLOWING DIRECTIONS:

1, 2, 3, 6, Simple directions

10, 11 Directions requiring choice

4, 5, 7, 8, 9, 12, Simple directions

13, 14, 15 Directions requiring choice

D. REFERENCE SKILLS:

1, 2 Parts of book

3, 4 Use of dictionary

5, 6, 7, 8 Alphabetizing

9, 10, 11 Table of contents

12, 13 Use of index

14, 15 Reading a graph

E. INTERPRETATION OF MATERIAL:

1, 8, 11 Topic or central idea

2, 3, 4, 12, Directly stated facts

13, 14, 16 Inferences

5, 6, 7, 9, 10, Sequence of events

15, 17, 18, 19, Inferences

20, 21, 22 Sequence of events

23, 24, 25 Sequence of events

† Column designed for recording Expected Grade Placements, Anticipated Grade Placements, School or Class Averages, etc. See Part 2 of Manual.

GATES ADVANCED PRIMARY READING TEST

For Grade 2 (Second Half) and Grade 3

TYPE APR

FORM 1

Type APR. Paragraph Reading



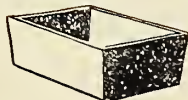
BUREAU OF PUBLICATIONS • TEACHERS COLLEGE • COLUMBIA UNIVERSITY

525 West 120th Street, New York 27, N. Y. Copyright, 1958, by Arthur I. Gates

Write your name here.....

How old are you?.....When is your birthday?.....

School.....Grade.....Date.....



1. Put an X on the ball.



3. Draw a line under the little book.



2. Draw a line around the milk bottle.



4. Draw a line from the pig to the tree. Put an X on the bird.

the teacher: Detailed instructions for administering and scoring this test are given in the Manual (included in each test package).

Number tried.....(possible 32)

Raw score (number of sentences correct).....

Reading grade.....

Reading age.....

sure to signal **STOP** at the end of 25 minutes.

Printed in U.S.A.



1. Draw a line under the little puppy who has gone to sleep.



2. The new automobile has just been delivered. Draw a line from the auto to the garage.



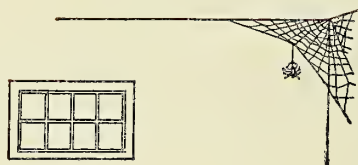
3. Here are a hat, bonnet, hood, and bathing cap. Put an X on the best thing to wear for diving into deep water.



4. Draw a line around the boy who is digging a tunnel in the sand.



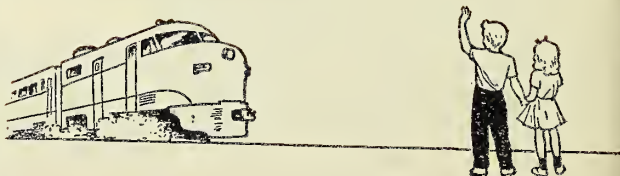
5. An elephant has four feet. Minnows have no feet. They swim. A pigeon has two feet and wings. Draw a line under something that has four feet.



6. This little spider is spinning a web in the corner of the ceiling. The web is very fine and soft. Draw a line from the spider to the little window.



7. My grandmother buys bulbs and seeds. She grows many kinds of flowers in her garden. Draw a line under something that my grandmother raises.



8. The children are waiting for their aunt and uncle who are coming for a visit. Look for the engine of the train. Draw a line from it to one of the children.



9. My grandfather is taller than my grandmother, and she is taller than I am. Draw a line under the one who is the shortest.



10. At the Halloween party we had so much fun. We danced, played games, sang songs, and bobbed for apples in a tub. Draw a line from a child to the tub.



11. One of these boys will go to camp for the summer. Another boy will go to sea. Draw a line under the one who will go to camp for the summer.



12. Mother is making me a sweater. She will put a collar at the neck, and then it will be finished. Mark an X where the collar belongs.



13. Yesterday the circus came to town. We saw animals and big wagons, and the clowns made everybody laugh. Make an X on the clown with black spots on his suit.



14. The little shepherd boy tends the flock of sheep. During the day they graze in the meadow and at night they return to the barn. Put an X on the little shepherd boy.

SUNDAY
JULY

TUESDAY
FRIDAY

15. Sunday, Tuesday, and Friday are the names of three days. July is the name of a month of our vacation. Draw a line under the word that is not the name of a day.



16. Two girls were caught in the rain. As there was no shelter, their teacher shared her umbrella with them. Draw a line from the smallest girl to what the teacher shared.



Peso



Shilling



Lira



Franc



Quarter

17. Different coins are used in the different countries of the world. In Italy they use the lira, in Mexico they use the peso, in England they use the shilling, in Switzerland they use the franc, and in the United States they use the quarter. If you were traveling in New York City, what money would you use? Mark an X on it. Draw a line around Mexico's money.



18. A cow produces milk, from which we get cream, and make butter and cheese. From a steer we get beef. Calves' liver is a very important food for persons suffering from a certain vitamin deficiency. Put an X on the animal that gives us milk and cream. Draw a line under the animal not mentioned in the paragraph.



19. Coffee and bananas grow in a semi-tropical climate. Coffee bushes must be shielded from the sun's direct rays. Since banana plants grow thick and tall quickly, they are planted so as to shade the coffee bushes. Put an X on one banana plant. Draw a line around the bushes that must be shaded.



20. Zebras are mammals, similar to small horses, native to Africa. Their bodies are a light cream color with blackish stripes, and their tails are black and bushy. They have keen sight, smell, and hearing, warning them at the approach of danger. One of their worst enemies is the lion. Mark an X on the African member of the horse family. Mark O on one of its enemies.

0

6

9

3

7

12

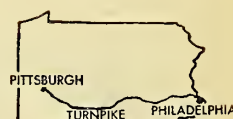
21. The scoreboard at the far end of the football field read: Navy 12—Army 6. Just then an Army man caught the ball and ran for a touchdown, which added six points to the Army's score. Neither team scored again before the game was over! Draw a line around the final score for Army. Place an X on the final score for Navy.

CALIFORNIA
MONTANA
OREGON



WASHINGTON
HAWAIIAN ISLANDS
RHODE ISLAND

22. Crater Lake National Park is in the state of Oregon. The water of the lake is of the darkest blue and very deep, with Wizard Island in the center. Draw a line under the name of the state containing Crater Lake. Put an X on the island.



23. The New York State Thruway is a super highway. It crosses New York State. Another super highway is the Pennsylvania Turnpike, which crosses Pennsylvania. Draw a line around the name of the highway that you would take to go from Albany to Buffalo. Put an X on the name of the highway that crosses Pennsylvania.



FOOD

NUMBER

ROTARY



THIRTY-TWO TEETH

24. Man has thirty-two teeth, as do apes. An ape's canines project and interlock, however, causing him to chew his food with an up-and-down motion. Man chews from side to side as well as up and down. This is called "rotary chewing." Draw a line under the teeth which project and interlock. Put an X on the word which tells how man chews.

THE CLAPP-YOUNG SELF-MARKING TESTS

Patented March 10, 1920. Also Licensed under U.S. Patent 1,586,028

Edited by Frank L. Clapp, Professor of Education, University of Wisconsin

THE NELSON SILENT READING TEST

Vocabulary and Paragraph

For Grades 3 to 9 — Form A

By M. J. Nelson, Ph.D., Dean of the Faculty, Iowa State Teachers College, Cedar Falls, Iowa

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To be used with a special Answer Booklet

SAMPLE EXERCISES

1. John is the name of a 1 school, 2 girl, 3 river, 4 boy, 5 flower. 1

Note: Which word tells the answer? What is the number of this word? "John" is the name of a "boy,"—so "boy" is the answer. The number of this word is "4." To show that you think "boy" is the answer, make a mark like this x in the square that has "4" in it. Read the next two questions and mark your answer in the same way.

2. Bread is something to 1 wear, 2 play with, 3 write on, 4 eat, 5 work with. 2

3. A dog is 1 a rock, 2 a plant, 3 a tool, 4 a person, 5 an animal. 3

PARAGRAPH TEST (Continued)

21. The author of a recent article concerning the celebrated race between the hare and the tortoise insists that the tortoise won the race because of the slogan, "Hard shell and hard living," which the friends of the tortoise adopted as their battle cry, and not because of any superiority of the tortoise himself. He then goes on to explain that the reason this version of the story is not widely known is that very few of those who witnessed the race survived the great forest fire which occurred shortly after. It came up suddenly one night when there was a strong wind. The hare and the tortoise and a very few of the beasts saw it from a great distance from a high, bare hill at the edge of the forest, and they hurriedly called a meeting to decide what messenger they should send to warn the beasts in the forest. It was finally decided to send the tortoise.

22. Wilbur recalled the old fable that a wild beast cannot stand the gaze of the human eye, and he stood at the edge of the clearing gazing steadily at the wildcat. But the snarls only grew louder. He did not like the looks of it at all. On the other hand, he had not the slightest intention of going back to camp without water. Wilbur advanced into the clearing, deciding that, whether the creature moved or not, he would now be so near that he couldn't miss her with the revolver. When he was very close, she snarled more fiercely and crouched ready to spring.

23. The voyages of discovery by explorers from England, Spain, and Portugal gave to each of those countries valid claims to territory in the New World. In 1524, Francis I of France resolved to have his share in these discoveries and in the benefits which might result from them. "What!" said he to his courtiers, "shall the kings of Spain and Portugal divide all America between them, without suffering me to take a share as their brother? I would fain see the article in Adam's will that bequeaths that vast inheritance to them."

24. Priest, monk, and prelate stood aghast,
As through the pageant the heathen passed.
A cross-bearer out of his saddle he flung,
Laid his hand on the pommel and into it sprung.
Loud was the shriek and deep the groan
When the holy sign on the earth was thrown!
The fierce old count unsheathed his brand,
But the calmer prelate stayed his hand.
"Let him pass free! — Heaven knows its hour —
But he must own repentance's power,
Pray and weep, and penance bear,
Ere he hold land by the Tyne and the Wear."

25. Durovitch had a very strange sort of eccentricity: he was disinclined to recapitulate any incident he had formerly related. If asked to do so, he would interpolate so as to make the original impossible of recognition. Yet so garrulous was he that on more than one occasion did he take so little cognizance of the words which flowed over his tongue in his efforts to regale his select coterie, that his hearers were able to worm from him essential repetitions. Such was the case one bitter winter evening when, recovering from an inordinate carousal, the village jokesmith was desirous of hearing a tale which Durovitch, himself a bit befuddled, had once produced out of his copious stock. Durovitch fixated the most timid of his hearers with that ghoulisg gaze, which one who would be regaled must learn to forbear, and the assembled company knew that the jokesmith had met with success.

C. What do you think happened? 1 the tortoise warned all the beasts, 2 the tortoise went to sleep, 3 the animals were all saved, 4 the tortoise moved so slowly that he could not warn many of the beasts.....

B. Where were the hare and the tortoise when they saw the fire? 1 racing, 2 in the forest, 3 on a high hill, 4 at a battle.....

A. What did the writer think about the tortoise? 1 that he is a poor messenger, 2 that he is very swift, 3 that he is very careful, 4 that he runs faster than the hare.....

A. How did Wilbur feel? 1 alarmed, 2 happy, 3 sleepy, 4 peevish.....

B. What kind of an animal did Wilbur see? 1 a lion, 2 a tiger, 3 a dog, 4 a wildcat.....

C. What do you think happened next? 1 Wilbur went home, 2 Wilbur shot the wild creature, 3 Wilbur jumped from the boat, 4 Wilbur petted the cat.....

A. What word do you think best describes Francis I? 1 generous, 2 tall, 3 covetous, 4 old.....

C. What do you think Francis I did next? 1 he took the next train to Spain, 2 he sent explorers to America, 3 he helped Portugal get more land, 4 he sold his ships to England.....

B. Over what country was Francis I the ruler? 1 England, 2 Spain, 3 Portugal, 4 France....

C. What do you think happened next? 1 the heathen rode away, 2 the count went home, 3 the prelate shot the man on horseback, 4 the priest rode into the night.....

B. What word tells how the count felt about the man's actions? 1 friendly, 2 angry, 3 amused, 4 overjoyed.....

A. Why were those assembled so horrified? 1 because the man struck the count, 2 because the man rode away, 3 because the count drew his sword, 4 because the man acted so irreverently

B. What kind of evening was it? 1 sultry, 2 cold, 3 warm, 4 rainy.....

A. What kind of man was Durovitch? 1 timid, 2 quarrelsome, 3 wicked, 4 talkative.....

C. What do you think happened next? 1 Durovitch went home, 2 Durovitch told a new story, 3 the jokesmith made every one laugh, 4 Durovitch repeated a story he had told before.....

VOCABULARY TEST

1. Gray is the name of a 1 fruit, 2 color, 3 house, 4 rock, 5 sign..... 1
2. Most dogs can 1 fly, 2 bark, 3 talk, 4 shoot, 5 sew..... 2
3. A rabbit is an 1 apple, 2 oak, 3 office, 4 animal, 5 orange..... 3
4. June is the name of a 1 day, 2 week, 3 year, 4 month, 5 boy..... 4
5. Silk is something to 1 wear, 2 eat, 3 sing, 4 burn, 5 fish..... 5
6. Speakers often stand upon the 1 zone, 2 roof, 3 trunk, 4 beach, 5 stage..... 6
7. Fuel is something to 1 burn, 2 reduce, 3 sew, 4 strike, 5 serve..... 7
8. Men often eat 1 spoons, 2 ants, 3 eggs, 4 miles, 5 stain..... 8
9. One sometimes sits on a 1 bench, 2 shade, 3 file, 4 belt, 5 soda..... 9
10. A banker often works with 1 stages, 2 boards, 3 checks, 4 saws, 5 lead..... 10

11. One may lie down on a 1 drill, 2 tear, 3 pencil, 4 top, 5 sofa..... 11
12. A garment is to 1 watch, 2 wear, 3 carry, 4 trace, 5 learn..... 12
13. A season is a part of a 1 bridge, 2 dairy, 3 sentence, 4 surface, 5 year..... 13
14. To roar means to make a 1 mistake, 2 boat, 3 hook, 4 noise, 5 meal..... 14
15. A gift is a 1 need, 2 list, 3 trade, 4 present, 5 pound..... 15
16. To dread is to 1 begin, 2 remove, 3 scratch, 4 fear, 5 fail..... 16
17. An expert does his work 1 badly, 2 noisily, 3 poorly, 4 well, 5 seldom..... 17
18. A mighty person is 1 small, 2 weak, 3 lame, 4 strong, 5 simple..... 18
19. A hare is a small 1 chest, 2 shipment, 3 animal, 4 pitcher, 5 base..... 19
20. A colt is kept in the 1 cradle, 2 shadow, 3 post-office, 4 stable, 5 factory..... 20

21. One often spends a vacation at the 1 office, 2 temple, 3 corner, 4 court, 5 beach. 21
22. Workers receive 1 launches, 2 ships, 3 hospitals, 4 wages, 5 levels..... 22
23. The officer wore a 1 chain, 2 uniform, 3 bracelet, 4 blouse, 5 sash..... 23
24. A ranch is a large 1 garden, 2 farm, 3 roll, 4 tool, 5 circus..... 24
25. Scarlet is the name of a 1 sense, 2 manufacturer, 3 color, 4 treasure, 5 food..... 25
26. A boss is a 1 player, 2 pearl, 3 brute, 4 rule, 5 master..... 26
27. To blush means to turn 1 white, 2 around, 3 dead, 4 sick, 5 red..... 27
28. The sleet made the pavement 1 wide, 2 secure, 3 crowded, 4 slippery 5 delightful 28
29. To charm means to 1 lean, 2 bruise, 3 delight, 4 earn, 5 lack..... 29
30. A calm person is 1 rough, 2 quiet, 3 jealous, 4 strict, 5 prompt..... 30

31. A model is a 1 dairy, 2 strike, 3 pattern, 4 reply, 5 chum..... 31
32. To recover means to 1 turn, 2 lead, 3 press, 4 inspect, 5 regain..... 32
33. Granite is a kind of 1 partner, 2 flower, 3 league, 4 rock, 5 route..... 33
34. A wrap is used to 1 strike, 2 instruct, 3 taste, 4 wear, 5 select..... 34

PARAGRAPH TEST (Continued)

17. After the furious storm of the night before, the day had cleared and the sun shone upon a fresh world. Tom and Jack, laden with dripping willow branches, hurried along through the wet meadow to the little creek in its center. Today the creek was swollen from the recent rain and it gurgled along over the rocks and had nearly covered the stepping stones which had at one time projected about two feet from the water. Tom tried to cross, but as the stones were wet and smooth, he slipped and fell in. Of course, the water was not deep enough to do him any harm, but as the current was swift, he called to the much excited Jack for help.

18. The night was an inky blackness and Joe Thomas was able to find his way only by flashes of light furnished by exploding bombs and shells. Joe was hastening to the spot from which had just come the anguished cry of his wounded comrade, Harry. Though his own leg was pierced and he was in no condition to care for himself, much less to care for his stricken comrade, he pressed forward, crawling by fits and starts as each new flare made it possible for him to find his way. Joe and Harry had been friends in their home town and the dangers of war had served to draw them closer together. It would never do for Joe to let Harry stay there alone now. Just a few more feet and he would be at his side. He called to him, for he was within speaking distance, and told him to wait for just a few minutes.

19. I was sitting on the edge of the bed, loosening the heel of one of my rubber boots with the toe of the other preparatory to an early retirement, when suddenly through the darkness and stillness of the sleeping town, from the power-house half a mile away came a low and rising note — the great siren whistle in the power-house. Almost fascinated, I listened as the great note rose higher and more shrill and died away again. One blast meant a fire in the town; two blasts, fire in the buildings at the mine; and three blasts, the most terrible of all, a disaster or trouble in the mine. Once more, after what seemed to be a long pause, the sound came again; and once more rose and died away. I did not move, but there was a sudden coldness that came over me as once more, for the third time, the deep note broke out on the quiet air.

20. Mexico, you will remember, was built upon an island in Lake Tezcuco. There are five great lakes in the Mexican valley; four of them are fresh and the fifth, Tezeuco, is salt. All the other lakes are at a higher elevation than the salt lake, and three of them higher than the city itself, even at the present day. And so it happens that, whenever a great rain occurs, and the higher lakes are flooded, the waters rush down into Lake Tezcuco, which has no outlet, and sometimes overflow the city. The first of these deluges, of which we have any mention, occurred in the year 1446. Montezuma and the Mexicans were greatly distressed by this great flood, which rose so high that all the streets were filled and the people compelled to go about in canoes.

B. What word describes the condition of the trees and grass? 1 wet, 2 dry, 3 dead, 4 yellow....

C. What do you think Jack did next? 1 he threw a stone to Tom, 2 he took off his rubbers, 3 he reached a willow branch to Tom and pulled him to shore, 4 he pulled the boat ashore.....

A. Which word tells how Tom felt? 1 angry, 2 happy, 3 frightened, 4 enthusiastic

B. Who was Harry? 1 Joe's enemy, 2 a German, 3 a spy, 4 Joe's friend.....

A. What was going on in the story? 1 a battle, 2 a picnic, 3 a storm, 4 a play.....

C. What do you think happened next? 1 Joe bound Harry's wounds, 2 Joe went to sleep, 3 Harry sent Joe away, 4 Harry went home.....

A. Which word best describes how the writer felt? 1 angry, 2 annoyed, 3 frightened, 4 relieved..

C. What did the author probably do? 1 he kicked off his boots and prepared for bed, 2 he immediately rushed to the mine, 3 he dressed carefully and walked to the mine, 4 he inquired of his wife if the whistle were the noon whistle

B. What time of day was it? 1 midnight, 2 noon, 3 evening, 4 mid-afternoon

C. What do you suppose was done? 1 the Mexicans sold the lakes, 2 the canoes were sold, 3 a great dike was built across the lake, 4 the people dried up the lakes

A. How did Montezuma feel about the flood? 1 tired, 2 glad, 3 distressed, 4 happy

B. How many of the lakes are higher than the city? 1 five, 2 four, 3 three, 4 one.....

VOCABULARY TEST (Continued)

35. Alcohol is a kind of 1 epidemic, 2 coloring, 3 liquid, 4 zero, 5 bureau.....	35
36. To tour is to make a 1 promise, 2 dwelling, 3 journey, 4 foundation, 5 success.....	36
37. To afford may mean to 1 relate, 2 furnish, 3 assure, 4 observe, 5 desire.....	37
38. Strict means 1 vacant, 2 severe, 3 recent, 4 homely, 5 comical.....	38
39. A base is at the 1 top, 2 bottom, 3 side, 4 roof, 5 capital.....	39
40. A mason works with 1 fruit, 2 ivory, 3 paper, 4 stone, 5 poultry.....	40
41. To proceed is to 1 prospect, 2 include, 3 continue, 4 destroy, 5 assist.....	41
42. To imagine is to have a 1 privilege, 2 license, 3 council, 4 vision, 5 schedule.....	42
43. Method refers to 1 facts, 2 position, 3 system, 4 justice, 5 volume.....	43
44. The pamphlet was made by the 1 lawyer, 2 grocery, 3 butcher, 4 publisher, 5 dentist.....	44
45. A suburb is a part of a 1 paragraph, 2 hospital, 3 creamery, 4 city, 5 drama.....	45
46. The traveler reached his 1 destination, 2 obligation, 3 comment, 4 expectation, 5 memorial.....	46
47. Evident means 1 frozen, 2 granted, 3 united, 4 tired, 5 plain.....	47
48. To investigate means to make 1 apology, 2 discount, 3 sacrifice, 4 remittance, 5 inquiry.....	48
49. Flannel is a kind of 1 rock, 2 cloth, 3 music, 4 dirt, 5 hardware.....	49
50. Rural refers to 1 kindness, 2 value, 3 defeat, 4 retail, 5 country.....	50
51. An exposition is a public 1 privilege, 2 exhibit, 3 obligation, 4 executive, 5 opinion.....	51
52. An unfortunate event is sometimes a 1 willow, 2 promenade, 3 circuit, 4 disaster, 5 sacrifice.....	52
53. A felon is a 1 tramp, 2 juvenile, 3 keeper, 4 follower, 5 criminal.....	53
54. When fruit matures it becomes 1 spoiled, 2 worse, 3 green, 4 poisoned, 5 ripe.....	54
55. Mental refers to the 1 program, 2 family, 3 topic, 4 mind, 5 wealth.....	55
56. A corporation is a business 1 guarantee, 2 obligation, 3 official, 4 organization, 5 exhibition.....	56
57. A client is one who consults an 1 assistant, 2 expert, 3 analysis, 4 acquaintance, 5 assembly.....	57
58. Juniper is a 1 fern, 2 tree, 3 vine, 4 goat, 5 weed.....	58
59. An ogre is a 1 fish, 2 demon, 3 deserter, 4 heathen, 5 conductor.....	59
60. A legal act is 1 wrong, 2 noisy, 3 lawful, 4 formal, 5 useful.....	60
61. An inexhaustible supply is one that cannot be 1 burned, 2 uncovered, 3 used up, 4 found, 5 opened..	61
62. A cymbal is used in 1 gardening, 2 surgery, 3 painting, 4 sculpture, 5 music.....	62
63. Moderate means 1 careless, 2 assured, 3 favored, 4 limited, 5 compared.....	63
64. Leisure means freedom from 1 supervision, 2 requirements, 3 ambition, 4 occupation, 5 disgust.....	64
65. A metropolitan person is 1 city-minded, 2 cultured, 3 rural-minded, 4 severe, 5 polite.....	65
66. A rampart is a 1 ramrod, 2 tower, 3 ditch, 4 barrier, 5 dungeon.....	66

PARAGRAPH TEST (Continued)

12. We were received very cordially, the squaw spreading for us a buffalo robe. Soon we were surrounded by curious Indians who wished to see us. The big pipe of peace having been passed, a lively conversation followed, after which we were led to different parts of the village. Wherever we stopped, the young squaws offered us more meat and the entertainer's pipe was very frequently passed. A storm that had been threatening for several hours now began in earnest.

13. As he glanced up, he noticed that the stars were invisible. Then he realized that Stan had pulled on the stick and they were climbing in an effort to get above the thick banks of mist. Higher and higher they mounted, and when Jack could see the stars again, although all was a gray void below, he breathed more easily. He could now see by the stars that they were headed right, and, although he knew Stan could keep to their course by his compass, he welcomed the additional guidance of the Big Dipper. After several hours the mists suddenly cleared, the sun arose in the east, and Jack's home town appeared lying directly below them.

14. The boatmen moved slowly up the pathway, each painful, weary step bringing them nearer their destination. The boat with its huge load was a great burden and the two lines were shifted at frequent intervals from shoulder to shoulder. Despite the weariness of the group, they suddenly began to sing. The clear tones of beautiful "Volga Boatman" floated out into the air, causing those who were passing by to pause and listen. As the workers continued their song, the boat finally came to shore and the men were not slow to cast off the tow lines.

15. At a National Nominating Convention the delegates of one party get together to nominate candidates for President and Vice-President. The delegates from each state group themselves around their banner. Bands play popular airs. The sections greet party heroes with prolonged cheering. Every one is enthusiastic. There is much noise and agitation pervading the entire crowd. At some time during the meeting a ballot is taken to see which of those nominated is to be the presidential candidate of that party. Sometimes no person receives enough votes in the first ballot to be elected as candidate.

16. Smith, first witness for the state, testified that while he was driving at twenty-five miles per hour the defendant passed him like a flash, on the wrong side of the street. He was so surprised that he watched the car until it collided with another at a crossing two blocks ahead, and turned over. Patrolman Jones, for the state, testified that when he arrived, there was trace of a broken bottle in the wrecked car and a strong smell of alcohol about the defendant, who was unconscious. Perry, driver of the other wrecked car, testified that on seeing the defendant approach, he had drawn over to the curb but could not avoid the swaying car of the defendant.

C. What do you think happened next? 1 we were given shelter in an empty tent, 2 we killed the Indians, 3 we threw the chief's pipe away, 4 we woke up the squaws.....

A. How did the Indians feel toward us? 1 envious, 2 jealous, 3 friendly, 4 hostile.....

B. What did the Indians give us to eat? 1 cereal, 2 corn, 3 bread, 4 meat

B. What were they doing? 1 flying, 2, sailing, 3 driving a car, 4 riding horseback.....

C. What do you think they did next? 1 they landed, 2 they watched the sun come out, 3 they watched the stars, 4 they jumped in a parachute.....

A. Which word tells about the boys' trip? 1 dangerous, 2 sunny, 3 cruel, 4 short.....

C. What do you think the boatmen did next? 1 ran about and jumped, 2 sank down to rest, 3 pushed the boat out into the river, 4 let the boat sink.

B. What word tells about the boat? 1 empty, 2 light, 3 heavy, 4 new

A. What word tells how the boatmen felt? 1 sorrowful, 2 excited, 3 angry, 4 tired.....

C. What do you suppose happens next? 1 the meeting is adjourned, 2 the members have a good time, 3 a new ballot is taken, 4 every one goes home

B. What is the purpose of the National Nominating Convention? 1 elect President and Vice-President, 2 select representatives, 3 elect electors, 4 nominate candidates for President and Vice-President.....

A. What is the general feeling among the delegates? 1 laziness, 2 excitement, 3 sorrow, 4 disgust..

A. To what does the evidence point? 1 defendant was within the law, 2 defendant was driving while intoxicated, 3 defendant was a happy-go-lucky fellow, 4 defendant was suffering from rheumatism.....

B. Who was driving the car wrecked by the defendant? 1 Smith, 2 Perry, 3 Brown, 4 Jones....

C. Barring other evidence, what probably resulted? 1 case was thrown out of court, 2 defendant was sentenced for driving while under the influence of liquor, 3 case was postponed at defendant's request, 4 the defendant was acquitted.....

VOCABULARY TEST (Continued)

67. The turret of a ship is its 1 tower, 2 range, 3 sails, 4 stem, 5 prow.....	67
68. To mangle is to 1 mend, 2 mix, 3 crush, 4 disdain, 5 weave.....	68
69. Inveterate hatred is 1 unknown, 2 deep-rooted, 3 inherited, 4 brilliant, 5 sensible.....	69
70. A highly decorative work is 1 respectable, 2 elaborate, 3 impossible, 4 immense, 5 permanent.....	70
71. Essential means 1 successful, 2 necessary, 3 practical, 4 sanitary, 5 universal.....	71
72. Idolatry involves 1 worship, 2 masonry, 3 laziness, 4 thieving, 5 preaching.....	72
73. To interpose means to 1 write, 2 intrude, 3 weaken, 4 remain fixed, 5 secede.....	73
74. One who is craven is 1 cowardly, 2 insane, 3 black, 4 bird-like, 5 greedy.....	74
75. An insolent person is 1 scheming, 2 bankrupt, 3 haughty, 4 dishonest, 5 heedless.....	75
76. An arrogant person is one who is 1 haughty, 2 wealthy, 3 subdued, 4 unsuccessful, 5 arrested.....	76
77. To warrant means to 1 appreciate, 2 separate, 3 imagine, 4 deserve, 5 register.....	77
78. An epistle is a 1 specialty, 2 lantern, 3 communication, 4 sacrifice, 5 comedy.....	78
79. Graduates of an institution are called 1 semesters, 2 principals, 3 alumni, 4 chaperones, 5 socialists..	79
80. An incompetent person is 1 young, 2 selfish, 3 unable, 4 stingy, 5 boastful.....	80
81. A cowl is generally worn by a 1 mason, 2 miner, 3 woman, 4 boy, 5 monk.....	81
82. Dissension involves 1 freedom, 2 forgiveness, 3 flight, 4 discord, 5 harmony.....	82
83. One who is discreet is 1 deceitful, 2 ambitious, 3 prudent, 4 sincere, 5 greedy.....	83
84. Preliminary is that which is 1 homelike, 2 necessary, 3 preparatory, 4 impossible, 5 satisfactory.....	84
85. An illiterate person is 1 unwary, 2 unskillful, 3 unwise, 4 unschooled, 5 unobserved.....	85
86. To consecrate is to 1 publish, 2 proclaim, 3 hallow, 4 free, 5 pardon.....	86
87. A man of perseverance is 1 low-bred, 2 yielding, 3 antagonistic, 4 trained, 5 steadfast.....	87
88. Omnipotent means 1 all-powerful, 2 intolerant, 3 forgiving, 4 all-wise, 5 harmonious.....	88
89. An ominous cloud is 1 high, 2 fleecy, 3 black, 4 threatening, 5 stationary.....	89
90. A tendril is part of a 1 game, 2 joint, 3 plant, 4 muscle, 5 tent.....	90
91. An indictment is a 1 charge, 2 statute, 3 commission, 4 warning, 5 proclamation.....	91
92. Alabaster is a variety of 1 plant, 2 rock, 3 color, 4 religious token, 5 sea-weed.....	92
93. Affluent means 1 poor, 2 abusive, 3 sincere, 4 profane, 5 abundant.....	93
94. A caustic remark is one which is 1 flattering, 2 sharp, 3 pleasing, 4 subdued, 5 inadequate.....	94
95. Sufficient means 1 practical, 2 sanitary, 3 attractive, 4 adequate, 5 profitable.....	95
96. Ecstasy generally refers to excessive 1 appetite, 2 grief, 3 joy, 4 drinking, 5 care.....	96
97. A commodious box is 1 strong, 2 watertight, 3 tricky, 4 porous, 5 roomy.....	97
98. A punctilious person is one who is 1 precise, 2 puny, 3 punished, 4 witty, 5 pugilistic.....	98
99. Forbearance is 1 disapproval, 2 vexation, 3 disgust, 4 restraint, 5 transportation.....	99
100. A scorpion is a 1 spider, 2 snake, 3 bee, 4 larva, 5 beetle.....	100

PARAGRAPH TEST (Continued)

7. John threw a snowball at Warren. Warren ducked, but the snowball hit him on the shoulder and brought a laugh from the rest of the boys. Warren's face grew red as he made a snowball and threw it with all his might at John. John dodged it, but in so doing slipped and fell into a puddle of water. In a rage John got up, picked up some snow, and, as they ran, put it inside Warren's collar. Warren turned around and gave John a big shove.

8. Harry, a five-year-old boy, came rushing up to his mother as she was working in the garden one summer day. She wondered what was wrong, for he seemed to be running unusually fast. As he approached her excitedly, he told her that John, his playmate, had fallen into the river about a quarter of a mile away. John had caught hold of a log that carried him to a little island in the middle of the river. Leaving Harry to care for his little sister, Harry's mother ran to the neighbors and brought Mr. Brown, who was a very good swimmer.

9. Little Bushy Squirrel was busily picking up chestnuts under the big chestnut tree. He was putting his winter supply of food away up in the top of a tall maple tree. As Bushy was running up the maple tree with his chestnuts, he noticed quite a commotion among the small forest folk over at Possum Creek. He at once hurried over to see what was the matter. Mr. and Mrs. Rabbit were crying bitterly. Their small son Jimmy had gone over to Farmer Brown's barnyard and had not come back. They were afraid he had been caught in a trap or Farmer Brown's big dog had chased him. At once a small company of forest folk was organized to talk the matter over.

10. John was taking a week's production of cream to town to sell it. After fastening the large can on the running-board, he started out. The road was smooth and he got along very nicely until he came to a corner about half way to town. There the rope holding the can broke, the can fell off, and the cream spilled out on the ground.

11. The two cars were badly smashed. The car from the north, according to eye-witnesses, was traveling at thirty-five or forty miles per hour just before the collision. The car from the east, while traveling at a moderate speed, almost passed the crossing before its rear wheels and seat were demolished by the bigger car.

A. How did the boys feel? 1 angry, 2 friendly, 3 tired, 4 ashamed.....

B. What made John fall in the water? 1 Warren pushed him, 2 he threw so hard that he fell down, 3 he fell trying to dodge a snowball, 4 he slipped purposely.....

C. What do you think happened next? 1 the boys walked home together, 2 Warren apologized to John, 3 the boys had a fight, 4 the other boys left

B. How far was the river from Harry's home? 1 two miles, 2 fifty feet, 3 one quarter mile, 4 two yards.....

A. What did Harry want to do for John? 1 drown him, 2 save him, 3 forget him, 4 leave him on the island.....

C. What do you think happened next? 1 Mr. Brown went down town, 2 John's father sent Harry home, 3 Mr. Brown swam out and brought John back, 4 Harry's father went swimming.....

C. What do you think the forest folk did next? 1 put Bushy into the trap, 2 chased Bushy Squirrel, who had killed Jimmy, 3 formed a plan to save Jimmy, 4 pulled Bushy's tail.....

B. What was Bushy doing when he noticed the excitement? 1 playing with his little sister, 2 storing chestnuts away for winter, 3 climbing the maple tree to sharpen his claws, 4 eating dinner.....

A. What word tells how Mr. and Mrs. Rabbit felt? 1 lucky, 2 sad, 3 happy, 4 busy.....

A. What caused the loss? 1 the road was too rough, 2 the rope was too weak, 3 the can was too light, 4 John drove too fast.....

B. How far had he gone before losing the cream? 1 about a mile, 2 one-third of the way, 3 to the first schoolhouse, 4 about half of the distance.

C. What do you think happened next? 1 John went home to tell his folks, 2 John went on to the creamery, 3 a tire blew out, 4 the price of cream went up.....

A. What caused the accident? 1 liquor, 2 fast driving, 3 mud, 4 slippery streets.....

C. What do you think happened next? 1 the fire wagons were called, 2 school was dismissed, 3 the ambulance stayed at the hospital, 4 a crowd gathered.....

B. Which car was the bigger? 1 the Cadillac, 2 the car from the north, 3 the slow-moving car, 4 the enclosed car.....

PARAGRAPH TEST

1. The sky grew darker and darker. A storm was very near. Lightning flashed. Thunder rolled. Jane was just a little girl and she was very much afraid of storms. She stood at the window looking out. "Oh, mother," she cried, "I am afraid. The rain is coming and the wind is from the west. It will rain in our west windows up-stairs."

2. Mary Ann went down town with her mother one morning to buy some things. Her mother stopped to talk to a friend. All of a sudden Mary Ann began to cry. A big dog was running right toward her. She did not like dogs. This one was very big and black. She had never seen it before.

3. Jack tried to get the big car out of the snow-bank. The wheels were in snow to the hub. He shoveled and shoveled, put on chains, and did everything he could to get the car to move. Nothing would help. Feeling worn out, he sat down on the side of the car and shook the snow from his clothes. He did not know what to do. Soon he looked down the road and saw a man coming with a team of horses.

4. Paul had planned on going to Uncle John's farm for a few days. But now it was raining and Uncle John could never come in all this mud with his new car! Paul was so disappointed that even playing with his dog was not fun any more. All day he sat by the window watching the rain. Toward evening he saw a tiny speck down the road. It came slowly nearer until he could see that it was a man in a wagon. It was Uncle John!

5. Jack had sat all morning on the bank of the lake with his pole and line, but had caught only two small bass. When he first came to the lake a week ago, he had caught three great big perch. Suddenly he felt a big tug on his line. Jack began to pull on the line excitedly. How hard he had to pull! It must be a large fish.

6. Betty tossed the ball to her brother. He tried to catch it, but fell down, and the ball fell through the tangle of vines and flowers at the side of the garden. Suddenly, before the startled children could move, a little man dressed all in green popped out of the bushes and began to rage at them. "Your horrid ball has ruined my home. You must come at once to our court. We will see if nasty human children may throw their balls into a good elf's house and make him homeless."

A. Which word tells us how Jane felt? 1 happy, 2 tired, 3 afraid, 4 hungry..... A

C. What do you think happened next? 1 Jane went to bed, 2 her mother got dinner, 3 Jane sang a song, 4 Jane ran up-stairs and closed the windows..... C

B. What kind of day was it? 1 sunny, 2 snowy, 3 rainy, 4 cold..... B

C. What do you think happened next? 1 the dog got killed, 2 Mary Ann laughed, 3 the dog ate a bone, 4 Mary Ann's mother chased the dog away C

A. What word tells how Mary Ann felt? 1 afraid, 2 tired, 3 happy, 4 sleepy..... A

B. What word tells what kind of dog Mary Ann saw? 1 brown, 2 black, 3 white, 4 small..... B

B. What did **Jack have** with him in the car? 1 a shovel, 2 a dog, 3 a team, 4 a snow-bank.... B

A. What word tells how Jack felt? 1 cheerful, 2 thirsty, 3 lonesome, 4 tired..... A

C. What do you think happened next? 1 Jack went to sleep, 2 the man with the team pulled out the car, 3 the car ran out of gas, 4 it began to rain C

B. Where did Uncle John live? 1 in the city, 2 on a farm, 3 on a ranch, 4 in Chicago..... B

C. What do you think happened next? 1 Uncle John went to town, 2 Uncle John took Paul home with him, 3 Paul went to bed, 4 it stopped raining..... C

A. How did Paul feel when he saw his uncle coming? 1 happy, 2 disappointed, 3 angry, 4 sad..... A

A. What was Jack doing? 1 swimming, 2 fishing, 3 reading, 4 rowing a boat..... A

C. What do you think happened next? 1 Jack pulled out a large fish, 2 Jack went home, 3 Jack fell out of the boat, 4 Jack cleaned his fish.... C

B. What kind of fish had Jack caught that day? 1 perch, 2 trout, 3 bass, 4 pickerel..... B

B. How was the little man dressed? 1 in ragged clothes, 2 in a leather suit, 3 like a prince, 4 all in green..... B

C. What do you think happened next? 1 the ball rolled into a ditch, 2 the children went to lunch, 3 the children went with the little man, 4 the little man gave them the ball..... C

A. What word tells how the little man felt? 1 pleased, 2 angry, 3 joyful, 4 sleepy..... A

PARAGRAPH TEST

Sample Exercise

Note: Read the paragraph carefully. Then read question "A" at the right.

Paul was sitting in the big chair before the fireplace. He had finished his arithmetic and language home work before supper and was now reading the paper. After reading a while, he glanced down the column of "Locals" until he came to this one: "Joseph Grant is spending the week-end at the home of his sister, Mrs. Corson, of this city." Paul and Joseph had been great friends in the lower grades before the Grants moved to a larger city.

- A. Which word tells how Paul felt after reading this news? 1 happy, 2 sad, 3 tired, 4 angry A

Note: "Happy" is the word that tells how Paul felt. To show that you think this is the right answer, make a mark like this X in the square that has "1" in it. Now read and answer the next two questions in the same way.

- C. What do you think Paul did next? 1 went to a show, 2 telephoned to Joseph, 3 burned the newspaper, 4 sat up all night. C
- B. What time of day was it? 1 evening, 2 noon, 3 midnight, 4 morning. B

APPENDIX C
OTHER TESTS

Read the following paragraph and then follow the directions at the bottom.

Early on a summer evening you are fishing with your eight year-old brother Harold, and your five year-old sister Jean. Each of you has a willow branch and a string for a fishing rod. You are on the heavy planks that form the top of the pier where boats can be tied near your summer cottage at the lake. Your Mother and Father are visiting friends at the next cottage a quarter of a mile along the lake. Suddenly Jean cries. She has pushed her bare foot between the planks and she can't get it out. What would you do? Tell what you would think, what you would do, and what you expect would happen.

SCHONELL GRADED WORD SPELLING TEST - A

net rag	can sat	fun hit	top lid
cap bell	had yes	let then	doll may
tree land	by how	ill your	egg cold
talk four	flower loud	son ground	seem lowest
folk remain	write hoped	amount worry	noise dancing
damage cough	else fitted	through spare	entered daughter
edge topic	search method	concert freeze	domestic avoid
duties liquid	recent assist	type readily	instance guess
attendance genuine	description interfere	welfare accordance	various mechanical
anxious accomplished	signature remittance	allotment financial	approval capacity
surplus resource	exceptionally prologue	successful colonel	preliminary coarse
referring attorney	courteous pinnacle	exhibition toboggan	affectionately definite
guarantee	anniversary	paraffin	accommodate

APPENDIX D
MISCELLANEOUS

Time-tables - Elementary Grades

.....Each teacher should post conspicuously in her room a time-table indicating the usual allotment of time to the various subjects during the week. This time-table is the framework into which the plans for the day will fit, but, of course, adjustments may be made to take care of special circumstances. Teachers may find it necessary to modify the following allotment of time, but they should do so only after careful consideration

Reading - Grade I - Major part of programme, correlated with enterprise and language.
 - Grades II,III - About 5 hours a week in directed reading, plus time for phonics and correlated reading activities.
 -Grades IV,V,VI - About 225 to 300 minutes a week, including Literature, but excluding reading time in connection with Enterprise and other subjects.

Arithmetic Grades I,II - Number activities can be easily correlated with the work in many other subjects, and so a definite allotment of time is difficult without consideration of these activities.
 Grade III - About 300 minutes a week.
 Grade IV,V,VI - About 225 to 300 minutes a week,

Language Grades II - VI - A definite period of approximately 30 minutes should be allotted to formal language instruction daily.

Spelling Grades II - VI About 75 minutes a week should be an adequate minimum for the week's words in the speller, but more time should be given to spelling in connection with language, social studies, arithmetic, etc.

Science About one or one and one-half hours a week. Division two probably will require more than one hour. Some

correlation with enterprise is possible.

Health -- About one of two periods a week, but if daily health discussions are used or if the work is incorporated into enterprise, this plan may be modified.

Handwriting - Grades II, III, IV - A minimum of 100 minutes will probably be necessary, preferably by one period a day.
Grades V, VI 2 Less time may be given to formal handwriting lessons if more time is given to checking all written work.

This distribution of time leaves about 425 to 635 minutes a week to be distributed to enterprise, opening exercises, music, art, phys. ed., story reading, etc. and to special remedial work. It must be.....

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